VIVOTEK ST3402

User's Manual

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Chapter 1 Installation

1.1 System Hardware Requirements

Before installing the application software, make sure your system has the following recommended minimum hardware requirements.

1.1.1 Recommended minimum system hardware requirements

The system requirement recommended for this application is as follows.

OS:	MS Windows 2000/XP/98SE/Me
CPU:	Intel 2.0 GHz Pentium IV or above and AMD Athlon or above
SDRAM:	512 MB SDRAM or above for 16 channels 256 MB SDRAM for 9 channels
Hard disk:	40 GB
Display Chip:	nVidia, GeForce series with 32 MB Display memory ATI Radeon series with 32 MB Display memory

Table 1-1 Recommended System Hardware Requirements

The following notes should help you with the proper installation of the software on to the recommended hardware system.

This application software only supports Intel Pentium IV series or above and AMD Athlon or above CPUs.

It is also recommended to run this application software on Win2000 OS to avoid any functional limitation.

Make sure all Power Management and Screen Saver functions are turned off to avoid system hang-ups.

1.1.2 Suggestions

The following suggestions will help you to run our software faster and smooth. All suggestions are optional.

1. Maximum supported hard disk space –

   200GB is the maximum tested supported hard disk space. Performance can't be guaranteed if the recording hard disk space is greater than 200GB.

2. In Window XP system, close system restore –

   In Window XP, system restore will help you to back to the previous restore point that recorded a snapshot of your computer. But when system restore is turned on, the disk I/O would be much worse. This means the recording of our application would be affected dramatically. So we recommend turning off the system restore for the application's recording disk. You can disable system restore in System Properties page (Start \ Control Panel \ System \ System Restore).

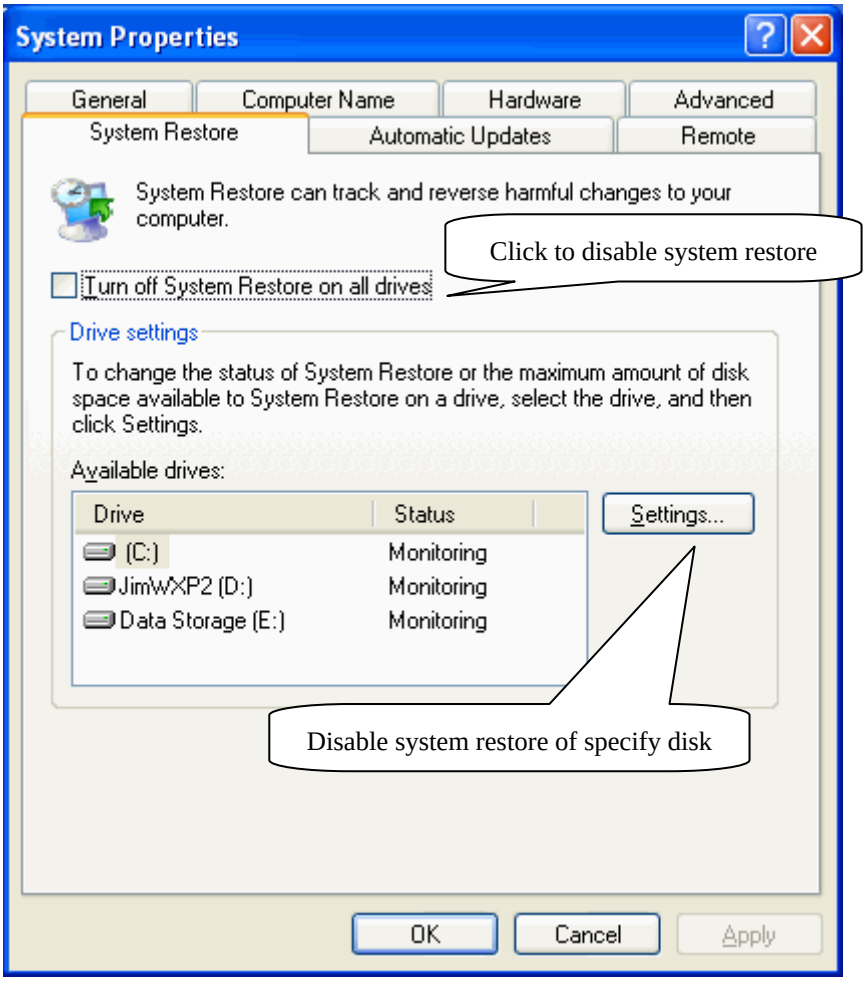

Figure 1-1 System Restore

As shown in Figure 1-1, you can disable system restore of all disk or specified disk.

3. Exclude file protectation for specified files in AntiVirus –
   The following Table 1-2 represents the specified files that should be excluded in AntiVirus to accelerate our application.

Suggest to Exclude
DBS, DES, DIA, DSK, DSS HGD, WAP, BCK

Table 1-2 Specified Files to Exclude

There are two ways to exclude file protection of above files from AntiVirus:
Method One:
Find “Option \ Auto-Protect \ Scan files using SmartScan \ Customize” and ensure above files don’t exist on the list. The following Figure 1-2 shows the location of the list.

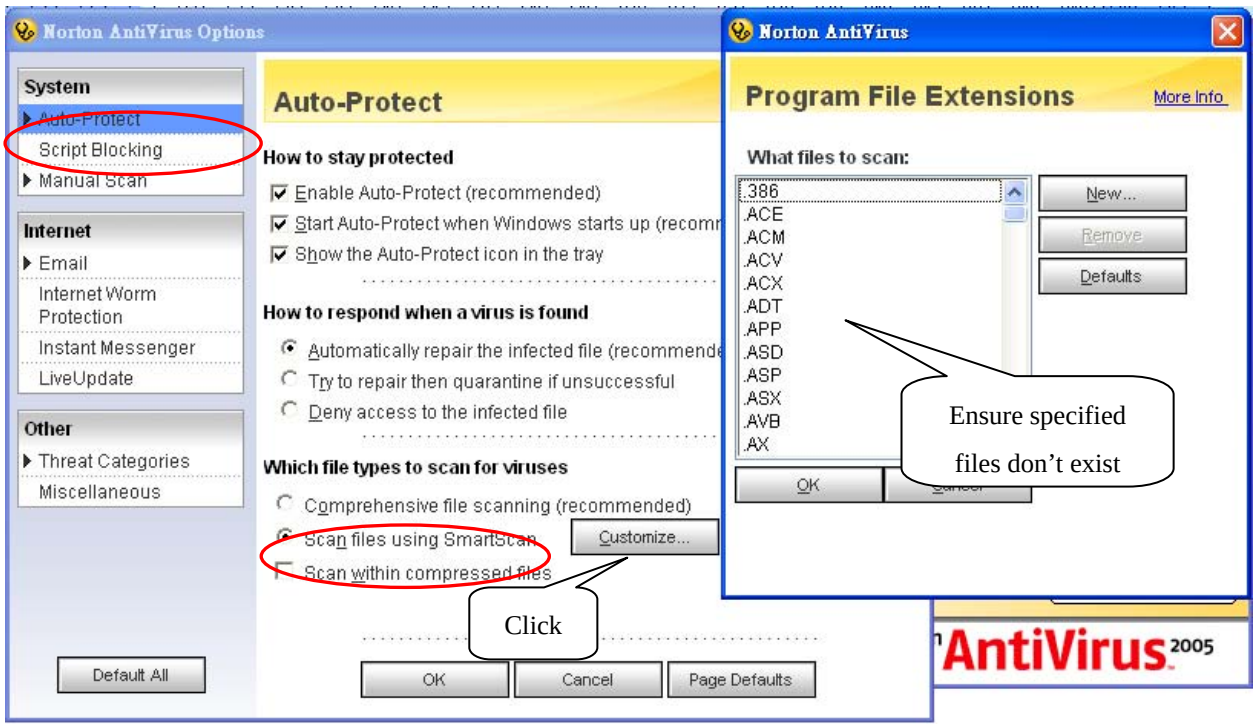

Figure 1-2 The File List in AntiVirus

Method Two:
Find “Option \ Auto-Protect \ Exclusions” and ensure all above specified files are added on the list. The following Figure 1-3 shows the list.

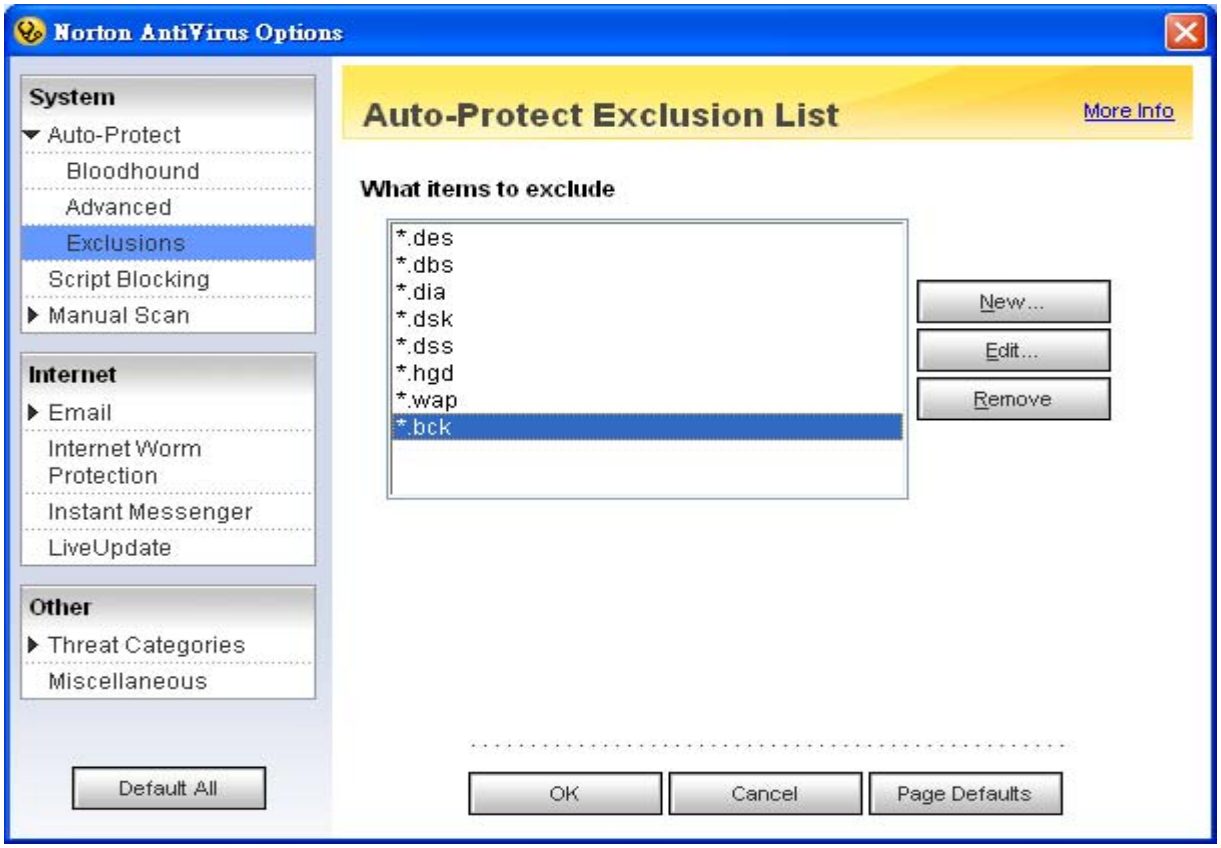

Figure 1-3 Auto-Protect Exclusion List

4. Exclude file protectation for specified files in PC-cillin –

   As shown in Figure 1-4, find “Settings \ Real-time scan \ Selected files \ Select File Types” and ensure the files described in table 1-1 do not exist in the list.

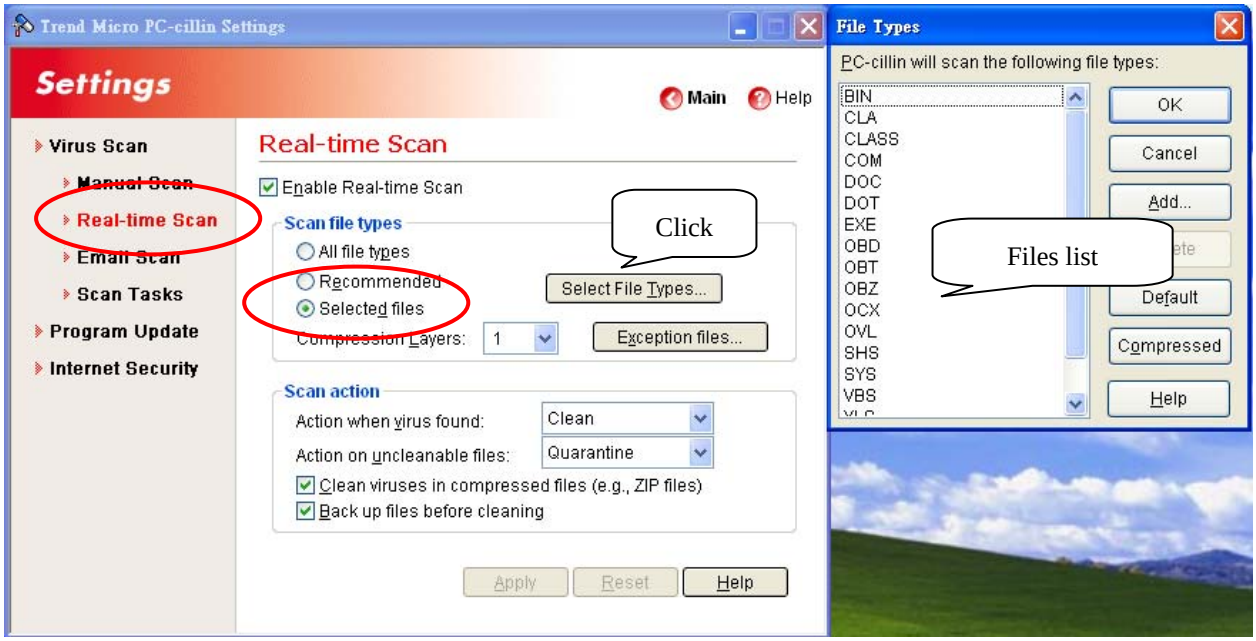

Figure 1-4 The File List in PC-cillin

NOTE: If the above settings cannot help you to improve performance, try to use disk defragmenter “Start \ All Programs \ Accessories \ System Tools \ Disk Defragmenter” to reconfigure your hard disk may help your computer more efficient.

1.2 Software Installation

The following are steps for the software installation.

STEP 1: Put the Installation disk into the CD-ROM drive, and installation should start automatically. If installation does not start, click on “Start” on the lower left corner of your screen and open “My Computer” and double click on the CD-ROM icon. The IP surveillance Recorder Installation Window will appear as Figure 1-5 in below.

Figure 1-5 ST3402 Smart VS-IP Recorder Installation Window

STEP 2: There are links on this page, including Quick Guide, User’s Manual, Release Note, and Install Software DVR. Click on “Install Software DVR” to launch the intallation shield. The InstallShield Wizard will come on and Figure 1-6 will appear.

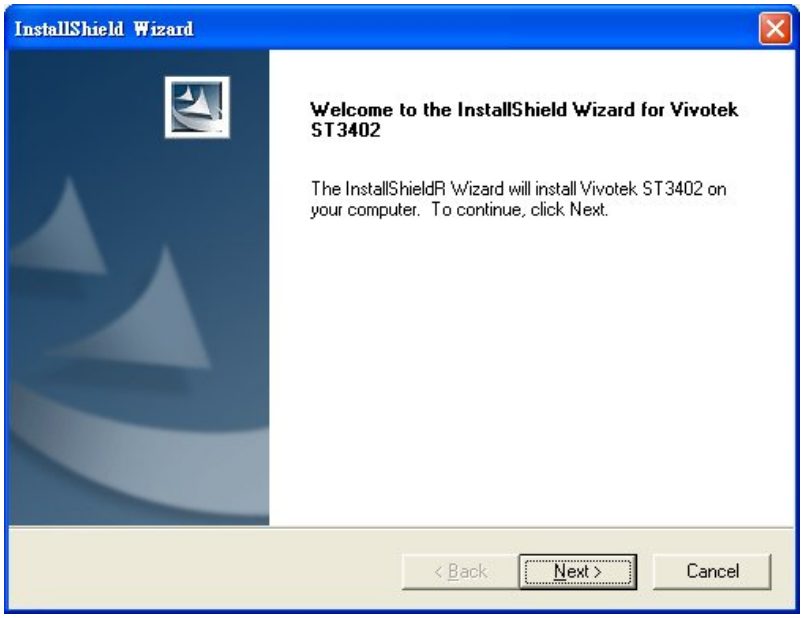
InstallShield Wizard
Welcome to the InstallShield Wizard for Vivotek ST3402
The InstallShieldR Wizard will install Vivotek ST3402 on your computer. To continue, click Next.
< Back
Next >
Cancel

Figure 1-6 Welcome page for the VIVOTEK ST3402

STEP 3: If you click on "Next" and Figure 1-7 appears, it means you have installed a previous version of the recording software (the previous version is the video-only version, which means it would not get the audio stream from servers). If you want to keep the previous version, choose the second option. If you are new to the Smart VS-IP recorder software, this window will not appear; skip on over to Step 4.

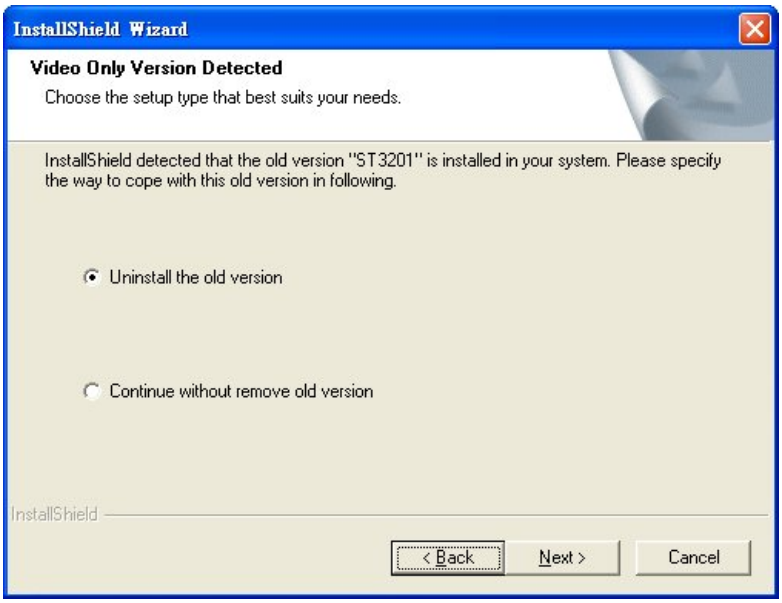
InstallShield Wizard
Video Only Version Detected
Choose the setup type that best suits your needs.
InstallShield detected that the old version "ST3201" is installed in your system. Please specify the way to cope with this old version in following.
Uninstall the old version
Continue without remove old version
InstallShield
< Back
Next >
Cancel

Figure 1-7 Video only version detected

STEP 4: Click on "Next"and the "User information" window will appear as in Figure 1-8. This window prompts you to enter a username, company name. Click on "Next"

to continue.

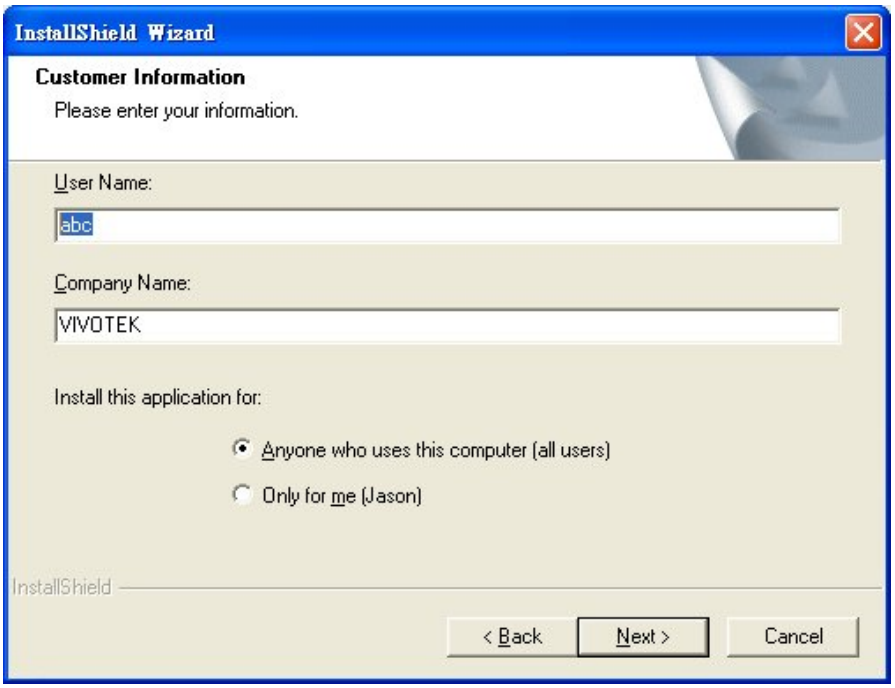

Figure 1-8 User information for Smart VS-IP Recorder

STEP 5: Set up the administrator's password by entering a password and confirm the password as shown in Figure 1-9. Click on "Next" to continue.

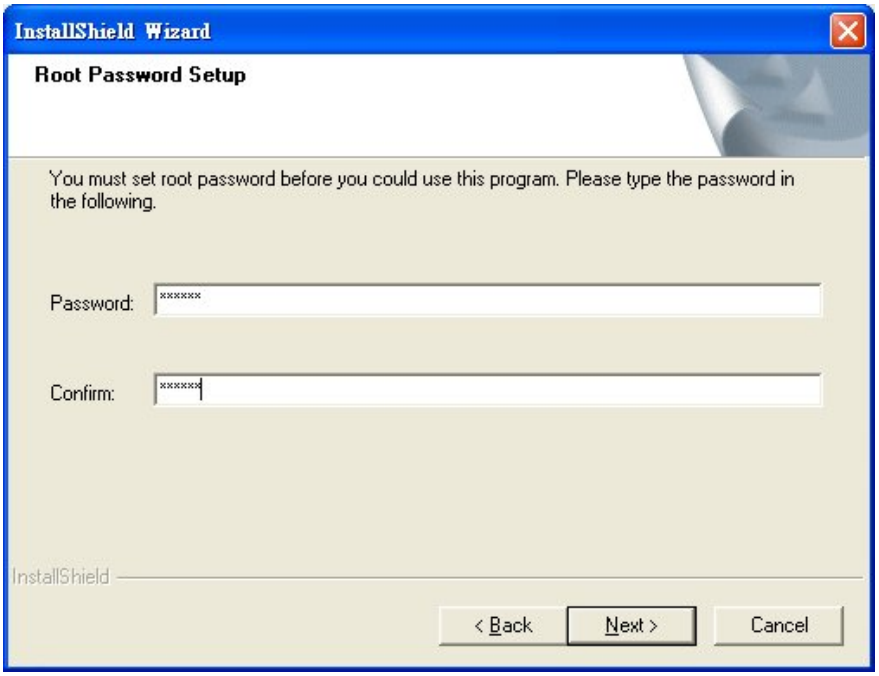

Figure 1-9 Confirm Password

STEP 6: Select the installation directory for this application software and click on "Next", as shown in Figure 1-10. You can also change the installation directory from the Default directory by clicking on "Browse…"

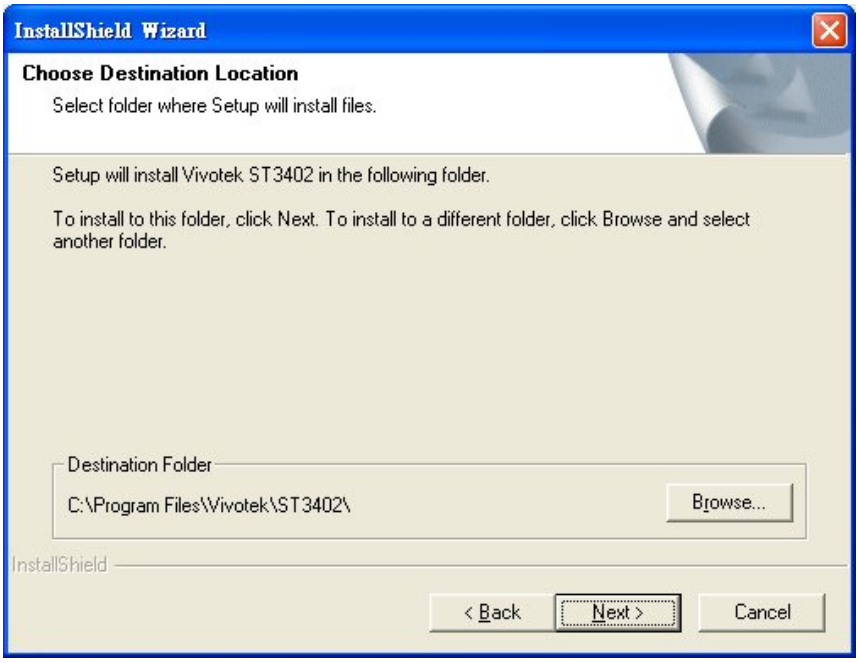
InstallShield Wizard
Choose Destination Location
Select folder where Setup will install files.
Setup will install Vivotek ST3402 in the following folder.
To install to this folder, click Next. To install to a different folder, click Browse and select another folder.
Destination Folder
C:\Program Files\Vivotek\ST3402\
Browse...
InstallShield
< Back
Next >
Cancel

Figure 1-10 Destination Location for Installation

STEP 7: Select a program folder to install the application software into and then click on "Next", as shown in Figure 1-11.

Figure 1-11 Select Program Folder

STEP 8: After checking all the set up information shown in Figure 1-12, click on “Next” to start file movement and registries update.

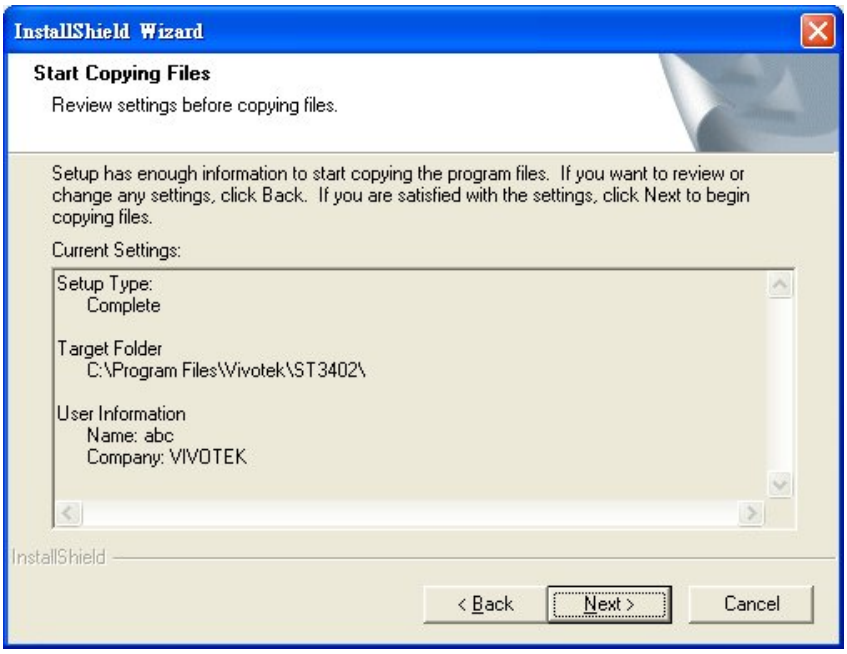
InstallShield Wizard
Start Copying Files
Review settings before copying files.
Setup has enough information to start copying the program files. If you want to review or change any settings, click Back. If you are satisfied with the settings, click Next to begin copying files.
Current Settings:
Setup Type:
Complete
Target Folder
C:\Program Files\Vivotek\ST3402\
User Information
Name: abc
Company: VIVOTEK
InstallShield
< Back
Next >
Cancel

Figure 1-12 Check Setup Information

STEP 9: Click on “Finish”, as shown in Figure 1-13, to finish installation. This completes the program installation.

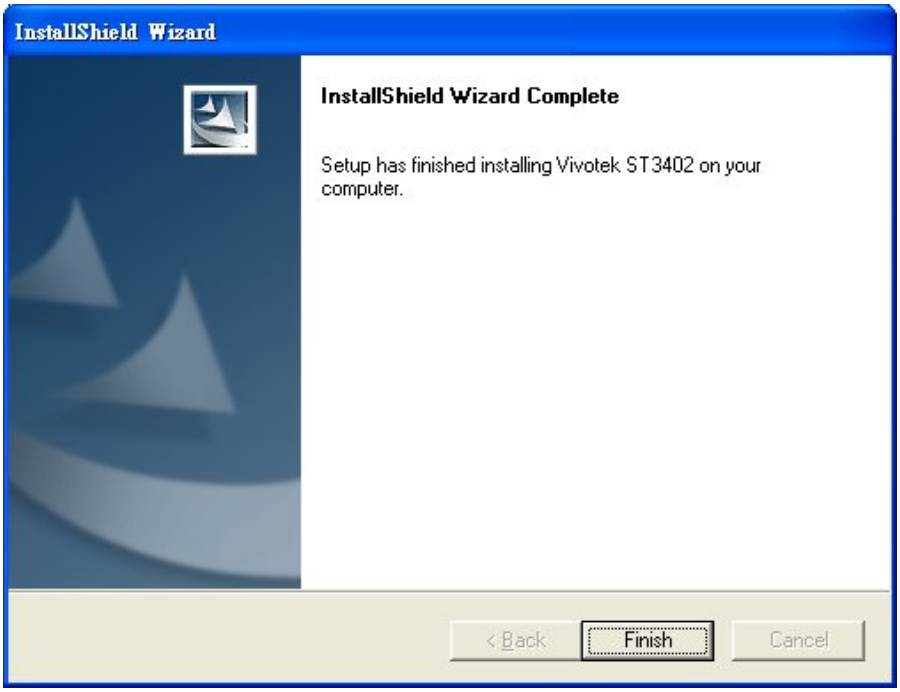

Figure 1-13 Finish the Installation

1.3 First Start up

After installation, one of the IE settings needs to be changed before you can start running the Monitor program. Enable the mechanism for submitting non-encrypted data in the path “Start->Settings->control Panel->Internet Options->Security->Custom Level…\Setting:” You can also find the path from the IE browser, as it is depicted in the following. You can follow the instructions to complete this setting, as shown in Figure 1-14.

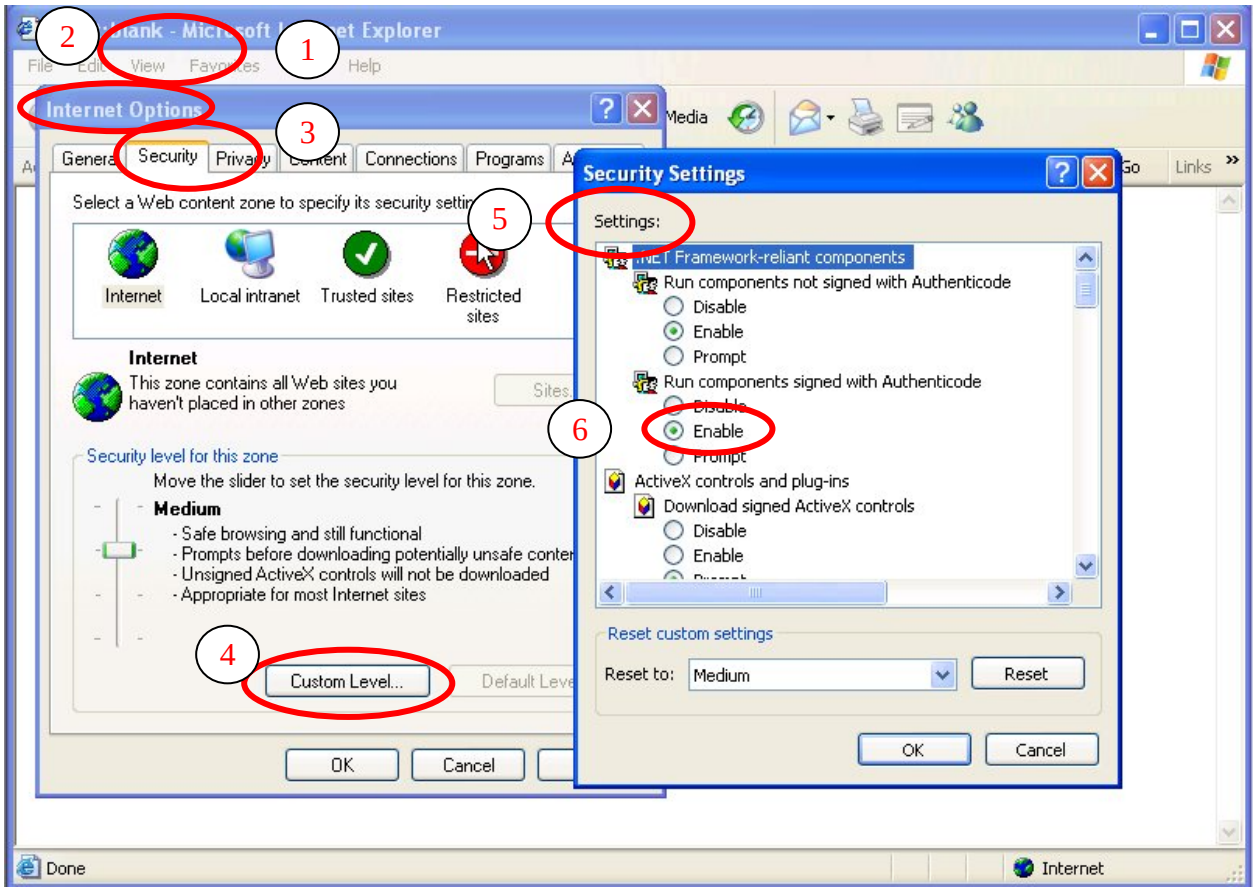

Figure 1-14 Enable Submitting Non-encrypted Form Data

Upon completion of the settings, you can start to invoke the Monitor program.

Chapter 2 Launcher

Launcher is a controller program that allows starting the recording procedure before the user logs in and the program will run as a service procedure after Window starts up automatically. LauncherUI is the program that provides a uer interface to allow the user to invoke Monitor or Playback quickly. In the following we refer to Launcher for both Launcher and LauncherUI.

2.1 Security for Launcher

Starting Launcher does not require passing the username/password check. Once invoked, Launcher can run automatically. However, if the user clicks on the Launcher icon in the system tray, the program will pop up a username/password dialog. This happens if this is a first time menu pop up, or when LauncherUI was locked. If the user fails to pass the authentication check, no menu will appear.

There are three kinds of group: root, power user and general user. After passing identification and authentication, functions will be enabled according to the login user's group. For more detail about user's group, please refer to section 2.2 User Inferface. The user can lock the Launcher as a security measure. When the Launcher is locked, it turns back to the Start-up state. The user needs to pass identification and authentication again to get to the popup menu.

ATTENTION: Only the login user or users of root group can unlock the program when the program is locked. Refer to 2.2 User Interface to obtain more detail about the privilege of user's group.

Below is the login window:

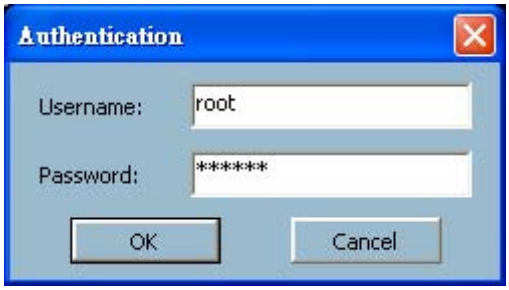

Figure 2-1 Login Dialog

When the Launcher is locked, the unlock window is as follows:

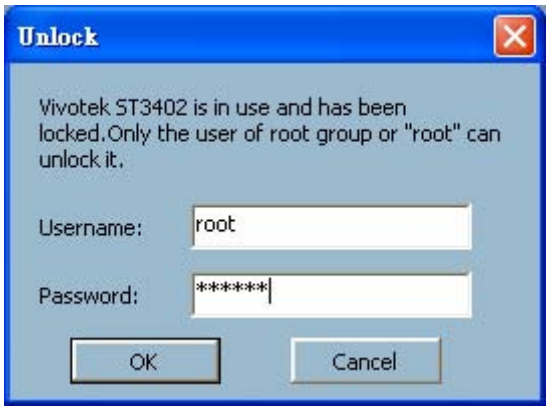

Figure 2-2 Unlock Dialog

The input area of the dialog will be grayed (disabled) for 60 seconds after three failure attempts.

2.2 User Interface

This is the user interface for Launcher:

Figure 2-3 Popup Menu

The main user interface for Launcher is an icon on the system tray. The popup menu

is displayed by clicking on the right or left buttons on the mouse. The menu items are listed below:

1. Lock Launcher – When this item is selected, Launcher will enter Lock mode. In Lock mode, whenever the user wants to invoke the menu, a dialog asking for username and password appears. The interface for this dialog is covered in the previous section.

2. Tools – This contains utilities; currently only change password and user management are implemented.
   I. Change password:
   The tool can be used to change the password of the login user. Below is the change password screen:

Figure 2-4 Change Password Dialog

   II. User management:
   Figure 2-5 shows the tool of user management. The tool can be used to add, modify or delete user. The maximum available user is 30 and the number of available user will be shown in “Resource” field. As shown in Figure 2-6, when you want to add a new user, you should specify user name, password and user’s group for the user. You can modify user’s status in Modify Status window.

ATTENTION: The tool can only be invoked by users of root group. The default root (root / admin) cannot be removed and the user could remove the other users of root group

Figure 2-5 User Management Window

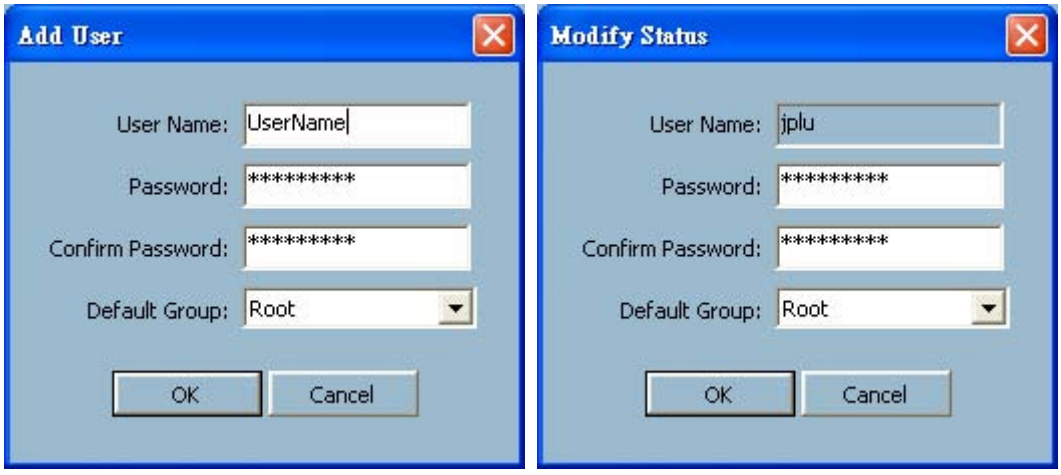

Figure 2-6 Add and Modify User Windows

Functionalities may be disabled according to the login user's group. The following Table 2-1 represents the privilege of each group in Lanuncher.

Item	Root	Power User	General User
Monitor Start Up Mode	ˇ		
User Management	ˇ		
Playback	ˇ	ˇ	
Change Password	ˇ	ˇ	ˇ
Exit	ˇ	ˇ	ˇ
Lock / Unlock	ˇ	ˇ	ˇ
Logout	ˇ	ˇ	ˇ

Table 2-1 The Privilege in Launcher

3. Monitor start up mode – The option decides the program type of Monitor that is described in section 3 after Window boot up. There are three kinds of types:
   Service: Do not Autorun – The Monitor will be run as a service but it will not be invoked automatically after Window boot up. Manual startup is needed.

   Service: Autorun – The Monitor will be run as a service procedure and it will be invoked after Window boot up automatically without login. Recording procedure will be also invoked if proper schedule is configured. More detail about scheduler in Monitor, refer section 4.

   Non-Service – The Monitor will be run as a normal procedure (non-service). User can invoke Monitor by using the interface provided by Launcher.

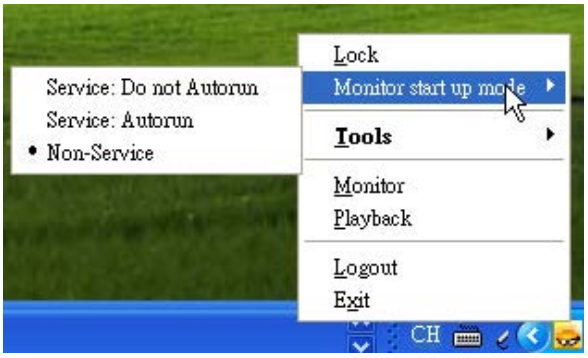

Figure 2-7 Monitor Start Up Mode

NOTE: When Monitor runs as service procedure, it will work in background after

closing (click on the close button in Monitor). It means that the recording procedure will be continued and user does not need to worry about missing media data that you like to record.

As the following Figure 2-8, a useful hint can help user to monitor the state of running channel, monitoring channel and recording channel. Move cursor on Launcher icon on system tray and the hint will pop up automatically.

Figure 2-8 The Hint of State

Running – The number of current running channel(s) in Monitor. Regardless of schedule, all connected channel will be counted.

Monitoring – The number of the channel that is running with schedule. If the connected channel without schedule, the channel will not be counted. Figure 2-9 and Figure 2-10 show Launcher icon when the number is equal to zero and not 0 respectively.

Figure 2-9 Launcher Icon with Zero Monitoring Channel

Figure 2-10 Launcher Icon with Non-Zero Monitoring Channel

Recording – The number of the channel that is recording now. The following Figure 2-11 shows Launcher icon when recording procedure is running.

Figure 2-11 Launcher Icon with Recording

4. Monitor – This starts up the Monitor. If the Monitor is already running, move the focus to it.

5. Playback – This starts up Playback. If Playback is already running, move the focus to it.

6. Exit – This ends Launcher. If the user chooses this option, a message box will pop up to confirm whether the user really wants to exit. It warns the user that exiting Launcher will also close Monitor and Playback.

Chapter 3 Monitor

3.1 Features of Monitor Tool

In this section, we will depict all features of the Monitor tool in this software.

3.1.1 Traditional Surveillance Features

The traditional surveillance features include the following

- ✓ Real-time monitor
- ✓ PTZ control
- ✓ Recording

3.1.2 Special Features

In our digital surveillance system, we support not only the features listed above but also the following features, making the system more powerful and convenient to use.

- ✓ Simultaneous real-time monitoring and audio and video recording
- ✓ High quality video, up to full-screen display
- ✓ High compression ratio
- ✓ Maximum support of 16 cameras with different monitor layouts
- ✓ Smart playback
- ✓ Triggered event browsing with 9 preview video windows
- ✓ Fast database searching
- ✓ Auto alarm in different ways
- ✓ Account-password protection
- ✓ Different recording modes: Event-driven, Scheduled and Manual recording for each camera
- ✓ Intelligent database index modes: indexing by sharp time tag, time interval, motion-detected events and digital-input events.
- ✓ Just-in-time snapshot
- ✓ AVI export
- ✓ Motion detection with 3 alert windows for each camera

3.2 Application Layout and Functionalities

This section demonstrates a global view of the Monitor tool, as shown in Figure 3-1. Components of the Monitor tool in details are shown in the following sections.

Figure 3-1 Overview of the Monitor Tool

There are several parts in the monitor tool:

✓ Miscellaneous functions:

These include application exit, minimization, full-screen display, lock, stop alert, and configuration menu for camera configurations, global settings, display and UI settings, scheduler settings, video/audio database backup, and the user information of this application software. The operation tips are provided on-line when you move the mouse cursor over each item.

✓ Channel area

This area displays the status of each channel. The information indicates the

status of connection, recording, selection, and alert-event triggered.

- ✓ Video area
  In this area, you can see the video of the selected channel in the display frame. The number of display frames in the video area depends on the layout chosen by the user. You can also do some convenient controls for the video display in it.

- ✓ Layout area
  You can change different monitoring layouts in this area. There are six kinds of layouts the user can choose from: 1, 4, 6, 9, 13, or 16 video display frames in the video area.

- ✓ Hard disk status
  In this area, you can get the status of the hard disk that the media datamedia database resides in. This reminds you to arrange for available storage size of the recorded media database. If the path set for recording is no longer valid or does not exist any more, the free space will show “Invalid Path” to remind you to update the setting.

- ✓ Common control area
  This area includes volume controller, manual recording, video printing, and snapshot, as well as a trash can to remove any video from display frames.

- ✓ PTZ control
  In this area you can do PTZ control, auto pan, auto patrol, and preset location control of the selected channel. The camera must be a remote Visual Server / Network Camera series product that supports PTZ functions.

- ✓ DI/DO control
  This tool receives digital input signal and sends digital output signal to the remote Video Server/ Network Camera series product associated with the dedicated channel.

- ✓ Alert Message
  This tool allows the display of the latest alert messages received from the remote Video Server / Network Camera series product associated with the selected channel.

✓ Talk

If the connected Video Server / Network Camera series product supports two-way audio feature, the tool can be used to talk with remote side by using additional device, such as mircophone.

3.3 Logging In

The authentication mechanism is implemented in Launcher. If user has already passed the authentication in Launcher, Monitor can be invoked without further authentication. If not, the Authentication of Launcher will be popped up and user must pass it to get Monitor shows up. There are three privileges in the user-protection system: the root, the power user and the general user.

3.3.1 The Privilege of Each Group

In the Monitor tool system, root privilege includes the right to access Video Server / Network Camera series products as well as changing local settings. However, this root privilege is not the same as that of the root privilege of the Video Server / Network Camera series product. You can change the settings of each selected Video Server / Network Camera in the remote site only if you have the root privilege of the remote Video Server / Network Camera series product.

The following Table 3-1 shows the privilege and limitation of each group in Monitor:

Item	Root	Power User	General User
Backup	ˇ		
Camera configuration	ˇ		
Display & UI settings	ˇ		
Global settings	ˇ		
Record	ˇ		
Schedule	ˇ		
DI/DO control	ˇ	ˇ	
PTZ contrl	ˇ	ˇ	
Change layout	ˇ	ˇ	ˇ
Lock	ˇ	ˇ	ˇ
Printer	ˇ	ˇ	ˇ
Snapshot	ˇ	ˇ	ˇ
Stop alert	ˇ	ˇ	ˇ

Table 3-1 The Privilege of Each Group in Monitor

Again, if you need to change the settings of remote Video Server / Network Camera series products, you must have the root user password for each of the products.

3.4 Camera Configurations

When you log in for the first time, you need to configure this application software to connect to the remote Video Server / Network Camera series products in “Configuration Menu \ Camera Configuration”, as shown in Figure 3-2. You must have the root (administrator) privilege in order to run the configuration.

Figure 3-2 Camera Configuration

ATTENTION: Once you click on “Configuration Menu\Camera Configuration” for

setting each camera, a warning window will pop up to warn you that all recording processes will be stopped.

3.4.1 The Layout of the Configuration

In this section, we discuss the local settings of the connection and the functional configurations of each camera. If you are interested in the remote settings for each camera, you can refer to each Video Server / Network Camera series product's user's manual that was shipped with the hardware. The following Figure 3-3 shows layout of Camera Configuration window.

NOTE: As for the location of the selected camera, you need to make sure the location string does not include prohibited characters such as “"\ / : * ? " < > |”. Otherwise, the “wrong” location string will cause the application program to malfunction. You can change the location string in “Video->Text on Video” of the remote setting webpage.

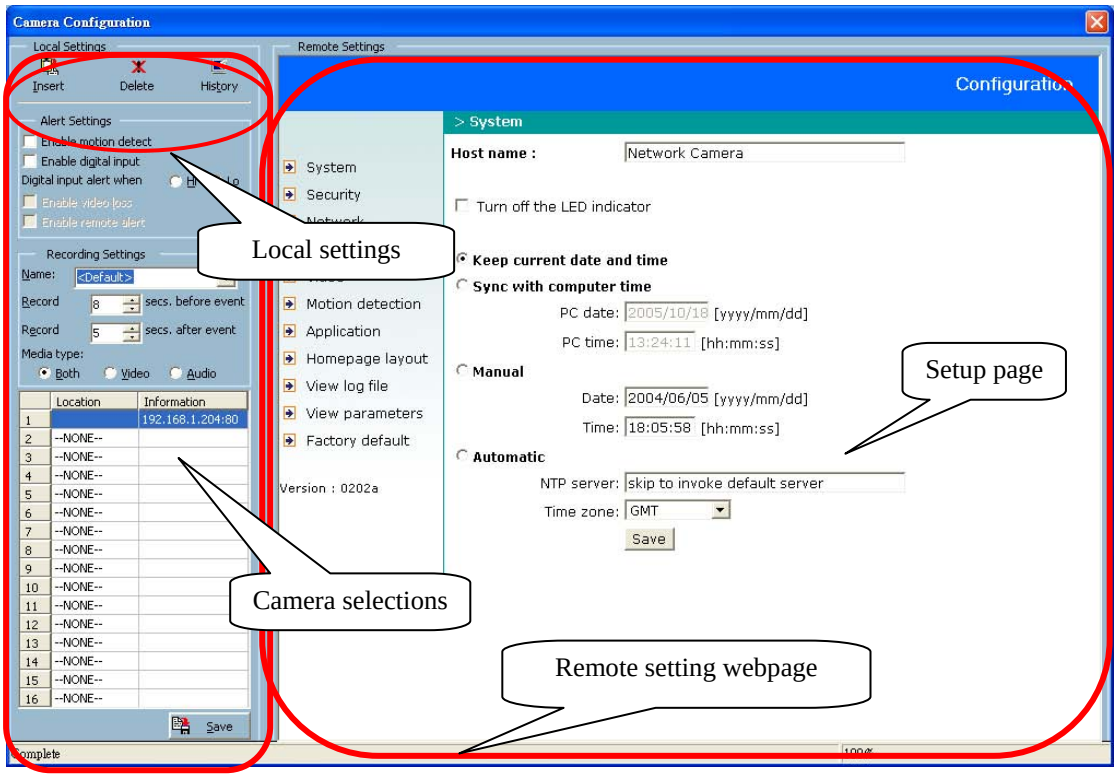

Figure 3-3 Layouts of Camera Configurations

3.4.2 Local Settings

In the local settings, as shown in Figure 3-4, there are three main functions:

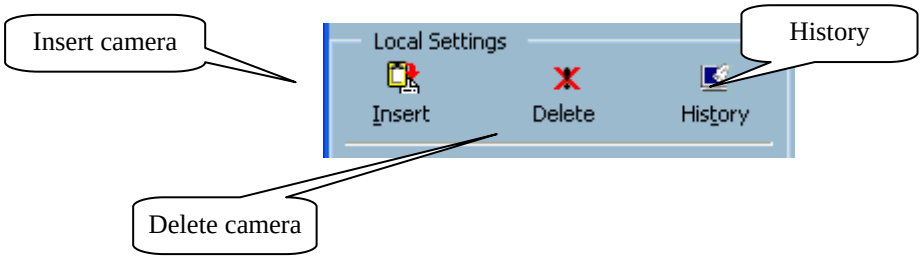

Figure 3-4 Local Settings

Insert – This allows the user to insert a remote Video Server / Network Camera series product to the camera list. Click on the “Insert” button, an “Insert New Channel” dialog will pop up, as shown inFigure 3-5. Specify the IP address, port and root password of the remote Video Server / Network Camera series product, and click on the “Ok” button to close the dialog. The system will try to connect to the selected camera. If the connection is successful, the camera will be inserted to the list.

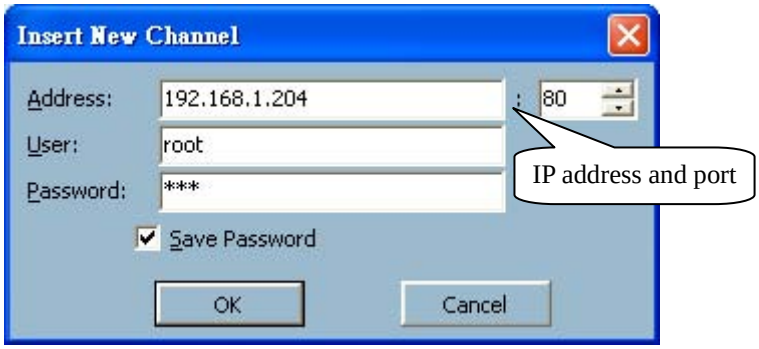

Figure 3-5 Insert New Channel Dialog

Delete – This removes the selected Video Server / Network Camera series product from the camera list. You should select a camera as shown in Figure 3-6 to remove.

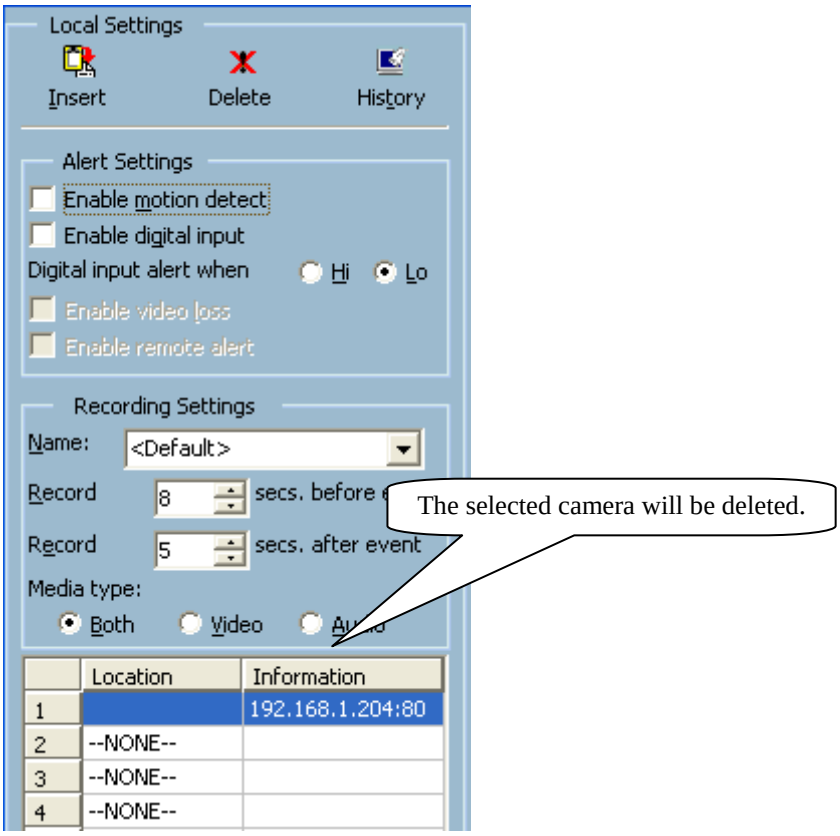

Figure 3-6 Delete a camera to the list

History – Clicking on the "History" button pops up a camera history list that shows the latest cameras that has been inserted into the camera list. The list could contain up to 16 entries. When you click on one of the cameras in the history list, the camera will be inserted into the camera list. The history list is shown in Figure 3-7.

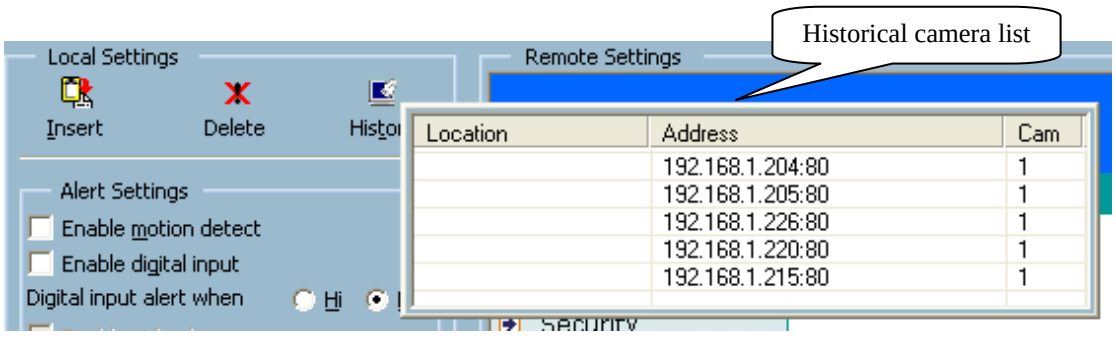

Figure 3-7 Popup historical camera list

.

3.4.3 Alert Settings and Recording Settings

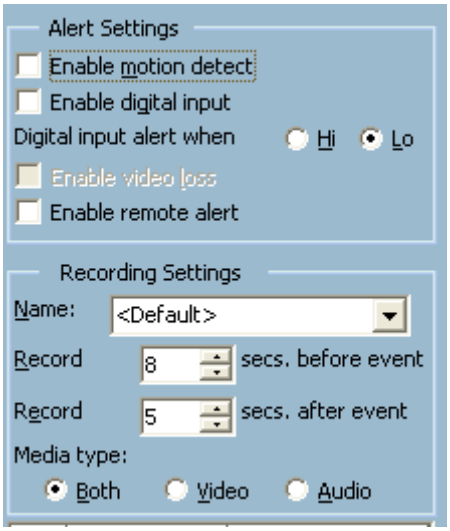

Figure 3-8 Alert Settings and Recording Settings

Alert Settings:

These settings guide this program how to handle motion detection, digital input alerts, video loss and remote alert.

✓ Enable motion detect –

With this checkbox checked, the program will trigger the alert sound (specified in "3.5 Global Settings \ Alert Sound") if motion is detected for the specified channel.

✓ Enable digital input –

This function is similar with that of "Enable Motion Detect". Selecting this option will activate the alert sound when the digital input of the remote Video Server / Network Camera series product is triggered.

✓ Digital input alert –

This option allows for defining the triggering criterion of the digital input of the remote Video Server / Network Camera series product. It can either be high-level triggered or low-level triggered.

✓ Enable video loss–

Enable this option will trigger alert when video loss. The video loss will occur when Video Server is connected and do not connect to any proper camera.

✓ Enable remote alert–

Alert sound will be played on remote side if the option is enabled, alert sound has been configured and the one of the above three alerts (motion/digital/video loss) triggered.

NOTE: Above items may be disabled when the connected server doesn't support the features.

Recording Settings:

✓ Name –

If you want to specify your own location name, specify it in this field. Otherwise, leave this field with the default value "<Default>". You will get a default location name which concatenates the string in the server's "Text on video" field with an underline and the channel index.

✓ Record # secs. before event –

Once the event recording is activated (using Scheduling) for channels, you can use this setting to regulate the time for the recording of the triggered event. The recording will start at the set time before the alert event starts.

✓ Record # secs. after event –

This set how long the recording will last after the alert event triggered.

✓ Media Type –

You can use this to specify which media type you want to record, Video, Audio, or both. In some case that the connection contains only media data, the recorded data will contains only media data though the choosen recording media type is both. Similarly, if the choosen type is audio, and the connection has not audio data, nothing will be recorded.

3.4.4 Changing the Camera Order in the List

You can use "drag and drop" in the grid area of the camera list to change the sequence of the connected Video Server / Network Camera series products, as shown in Figure 3-9. This is helpful when you want to rearrange the cameras' order.

Step 1: Step 2:

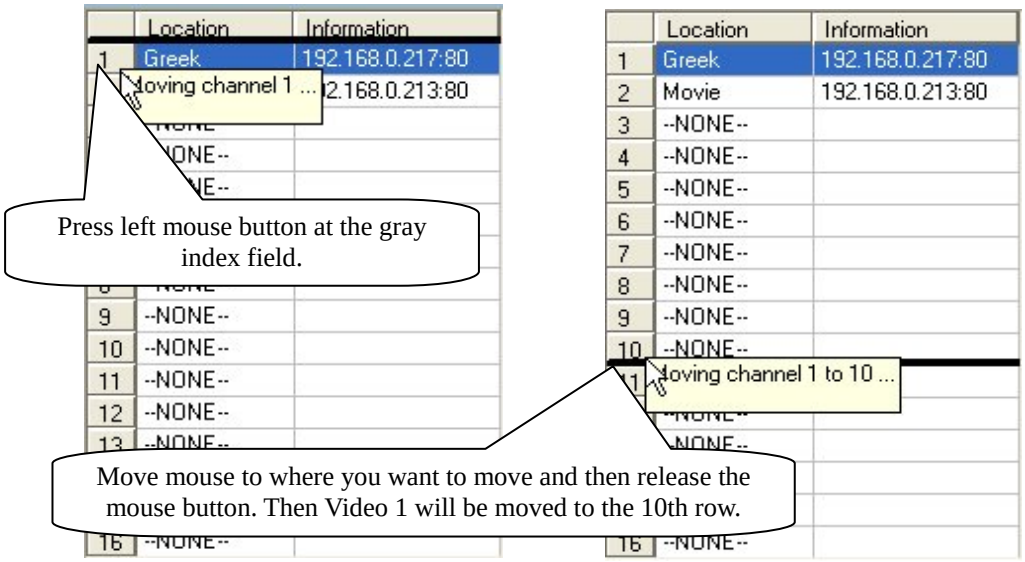

Figure 3-9 Change the Sequence of the Connected Camera

3.4.5 Saving the Changes

Once you have clicked on the “Save” button in the bottom left corner of this window, the changes for all camera configurations will be saved and validated immediately in this IP surveillance system.

NOTE: If you try to change the remote settings of any Video Server / Network Camera series product in the web page (right part of this window), you will need to apply the “SAVE” button in each corresponding page in order to save the settings to the remote servers. There are different “SAVE” buttons for changing the settings of the local IP surveillance system and that of the remote Video Server / Network Camera series product.

3.5 Global Settings

After completing the connection for each remote Video Server / Network Camera series product, you will need to configure the global settings for all the connected servers. These include the media datamedia database directory, the usage of the hard disk, internet settings and backup status information.

Figure 3-10 Global Settings

You can activate the global setting window from “Configuration Menu \ Global Settings...” as shown in Figure 3-10.

ATTENTION: A warning window will pop up to alert you that all recording processes will be stopped when activating the global setting window.

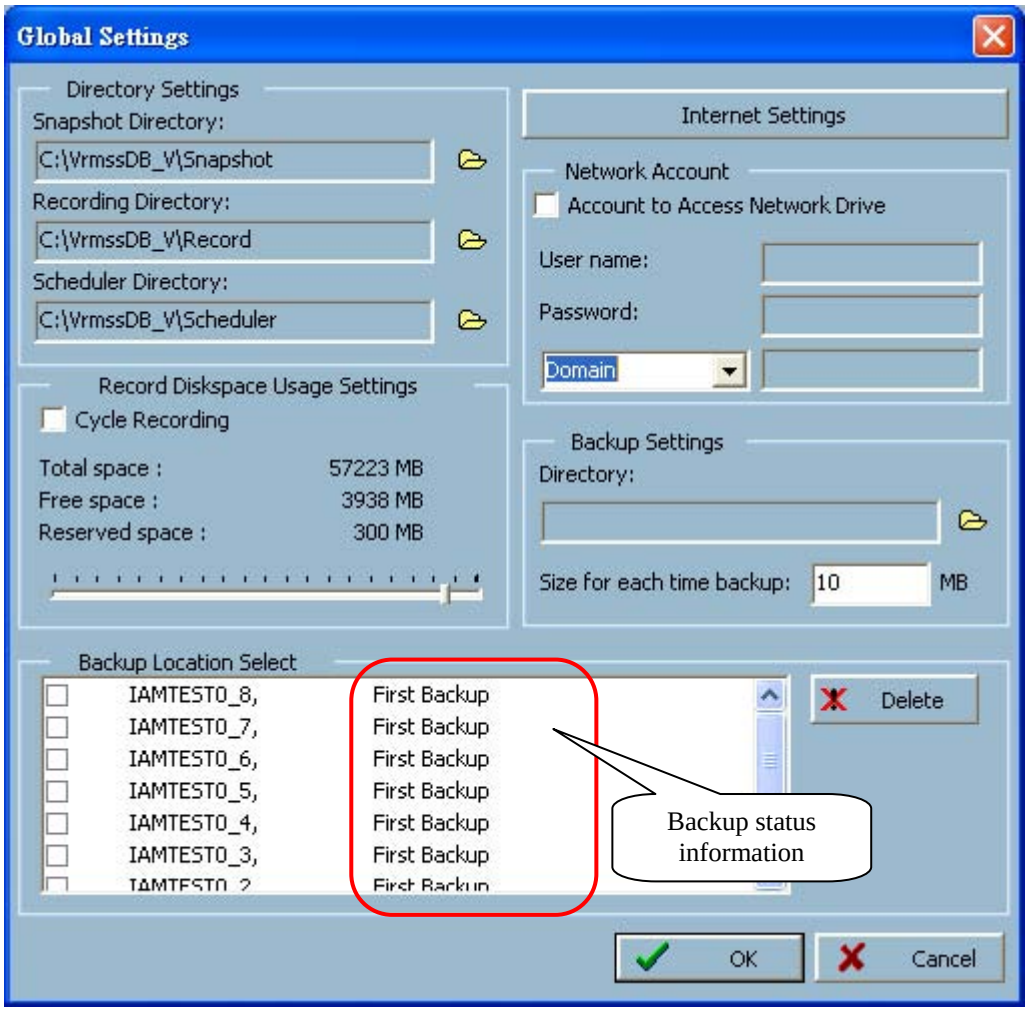

Figure 3-11 Global Settings Window

Directory Settings:

✓ Snapshot directory –
This is the directory for storing the snapshots in *.bmp format from channels as shown in Figure 3-11.

✓ Recording directory –
This is the directory for storing the recorded media data from remote channels.

✓ Scheduler directory –
This is the directory for storing the default and user-customized plots for the recording schedule of each channel.

Record Diskspace Usage Settings:

✓ Cycle Recording –
When this setting is turned on, the media database system will overwrite the oldest data if the usage of the current database has reached its storage limitation. In other words, it will record media data circularly. If this setting is not selected, i.e. unchecked, a warning message will pop up when it is approaching the limitation. After that, it stops recording when the limitation of the hard disk usage is reached.

✓ Reserved space –
This indicates the size of the hard disk to be reserved on the recording disk. If the recording data exceeds this limitation, the new in-coming media data will replace the oldest data if “Cycle Recording” was selected. Pre-buffer mechanism will take some space if some channel is already configured but not recording.

Internet Settings:

You can set the proxy server and the IP filter by clicking on the “Internet Settings” button. This setting is helpful for connecting Video Server / Network Camera series product in the Intranet while the proxy server is in use at the same time.

You can enable or disable the usage of the proxy server by the check box shown inFigure 3-12. If you enable both the proxy server and IP restriction, the listed IP addresses will not be applied to the proxy server. Often, the listed IP address will be the one assigned to the Visual Server / Network Camera series product in the Intranet.

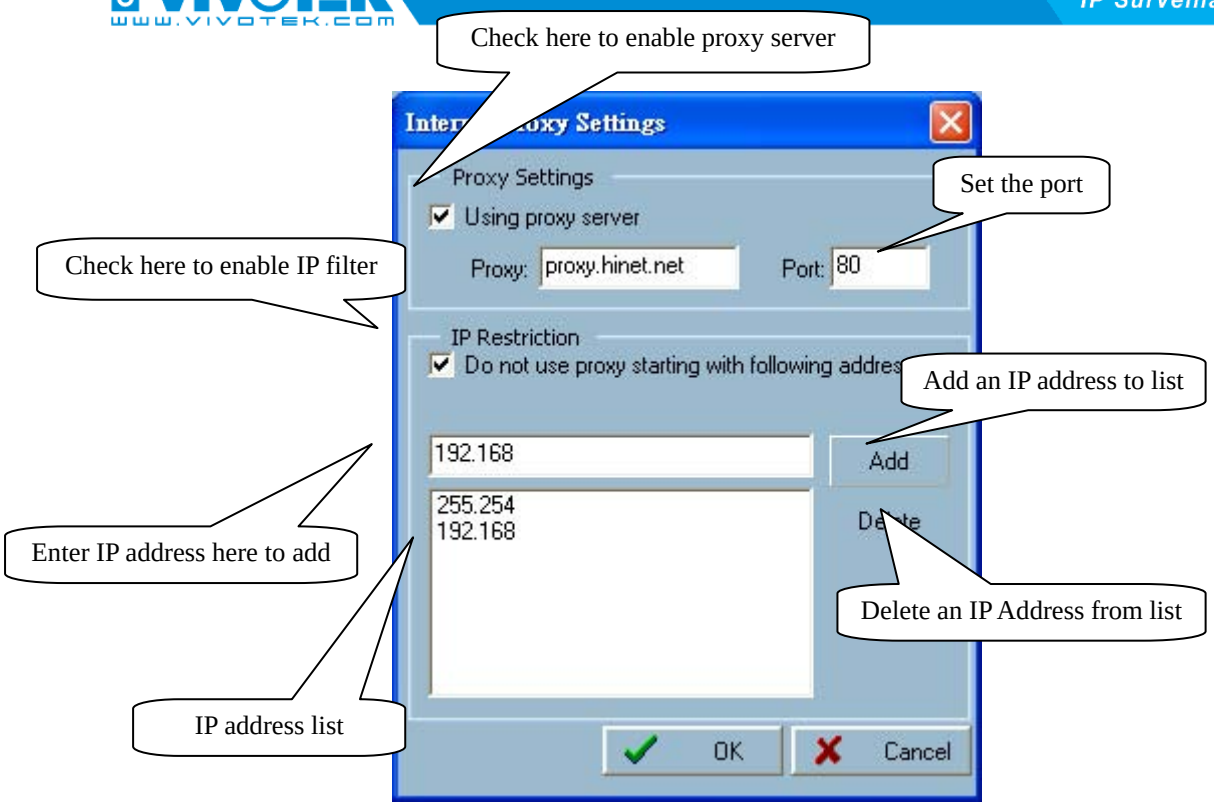

Figure 3-12 Internet Proxy Settings

Backup Settings:

In this setting, you can select the directory, maybe a remote hard disk, for the media database backup; as well as the backup size of your backup media.

Backup Location Select:

This window provides the settings for backup and the deletion of media datamedia database. You can select the check box to direct which channels need to be backed up. You can also click the “Delete” button on the right to delete the media datamedia database corresponding to the selected channel. Several kinds of backup status information will be shown for each channel. Normally the status shows the time of the last backup, which indicates the time you last backed up to the dedicated media. “No Data” means that there is no media data recorded for this channel. “All Backup” means all the data in this location have been backed up. “First Backup” means there are media data recorded for this location and there has not been any backup operation prior. Please refer to Section 3.7.3 for the activation of backup operations.

Network Account:

As shown in Figure 3-13, if you want to set the record path to the network drives, you should enable the option “Account to Access Network Drive”, and give the local user’s name, password and network domain (or Host Name / IP). To backup data to network driver, you also need to setup the account.

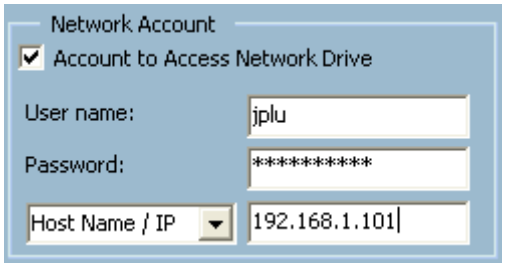

Figure 3-13 Network Account Drive settings

NOTE: The network account must be able to login the machine that runs the application (ST3402) and also the machine that provides the network drive. You can also specify the Host Name or IP to enable network account settings.

3.6 Display & UI Settings

Options of video display and alert settings can be modify in Display & UI Settings dialog. Recording and monitoring can be continued when you open this dialog. You can activate the Display & UI setting dialog from “Configuration Menu \ Display & UI Settings...” as shown in Figure 3-14.

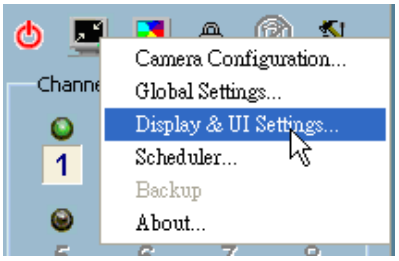

Figure 3-14 Display & UI Settings

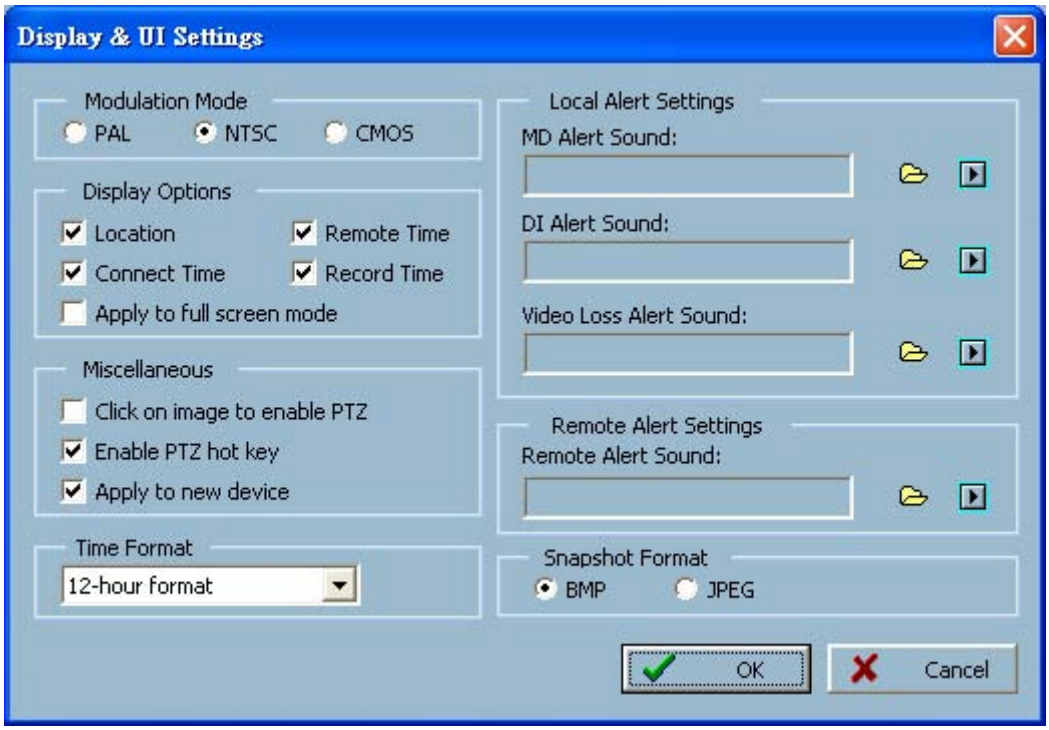

Figure 3-15 Display & UI Settings Window

Local Alert Settings:

You can load custom *.wav file for the sound of alert triggering. You can also listen to the sample of the chosen sound file by clicking on the “Play” button (the button with black right arrow).

Remote Alert Settings:

As local alert settings, you can load *.wav file for the sound of alert triggering and the sound will be played on the remote side.

NOTE: If user doesn’t enable alert settings that described in section 3.4.3, alert sound can’t be play when proper event occurs. Remember to enable alert settings which you like to.

Snapshot Format:

There are two kinds of snapshot format (.jpg and .bmp) that can be selected by user.

Modulation Mode:

You must select the input signal format (NTSC, PAL or CMOS) to display the original resolution of video stream from the remote Video Server / Network Camera series product.

NOTE: You must select the input signal format according to the camera type or CCD module type that is connected to the remote Video Server / Network Camera series product, regardless of the power line connected is 50 or 60 Hz.

Display Options:

In the video displaying frame of each channel, there are two status bars associated with it. On the upper side, the status contains “Camera location” and “the time of the remote site”. On the lower side, the status includes “Connection time” and “Recording time”. As shown in Figure 3-16, all can be enabled or disabled individually. The “Apply to full screen mode” can also be turned on. Once it has been selected, the status bar in each channel will show the date, location, connection and recording time in both displaying frame mode and full screen mode.

Figure 3-16 Status on the Displaying Frame

Miscellaneous:

✓ Click on image to enable PTZ –

Enable this option can let you control PTZ by clicking on displaying frame. If this option is enabled, the cursor icon will be changed when cursor moving into a displaying frame which associates with a PTZ-enabled Video Server / Network Camera series product, as shown in Figure 3-17. You can move camera to any point you want by clicking on displaying frame.

Figure 3-17 Cursor change to click on image mode

✓ Enable PTZ hot key –

When the option is enabled, user can control PTZ camera by using keyboard. The following table represents functionality of each hot key:

✓ Hot Key	✓ Functionality
✓ NUMPAD_0	✓ AutoFocus
✓ NUMPAD_1	✓ Focus -
✓ NUMPAD_2	✓ Down
✓ NUMPAD_3	✓ Focus +
✓ NUMPAD_4	✓ Left
✓ NUMPAD_5	✓ Home
✓ NUMPAD_6	✓ Right
✓ NUMPAD_7	✓ Zoom -
✓ NUMPAD_8	✓ Up
✓ NUMPAD_9	✓ Zoom +
✓ NUMPAD_DIVIDE	✓ Pan
✓ NUMPAD_MULTIPLY	✓ Stop
✓ NUMPAD_SUBTRACT	✓ Patrol

Table 3-2 PTZ Hot Key

✓ Apply to new device –

After reconnected to Network Camera or video server, if Monitor found that the server type changes, for example, the original camera is with a built-in PT len, but the connected device is a video server. This setting tells the Monitor to accept the new device and use the previous setting values (such as schedule and recording media type, …ect) For more detail, please refer to section 3.7.1.

3.7 Using Monitor Tool

This section depicts methods of manipulating the Monitor tool.

3.7.1 Connection of the Video Server / Network Camera Series

Channel:

Once you have connected a Video Server / Network Camera series product, you can drag and drop the camera to the video area. As for the channel area shown in Figure 3-18, if you have not set up the camera for the channel, the color of the channel number will be gray. Once you have set up the camera in the channel, the color of the channel number will be blue. This also means that this channel is associated with the remote Video Server / Network Camera series product. You can then click, drag, and drop the camera to the video area to monitor the remote video, and apply other features, if your privileges allow.

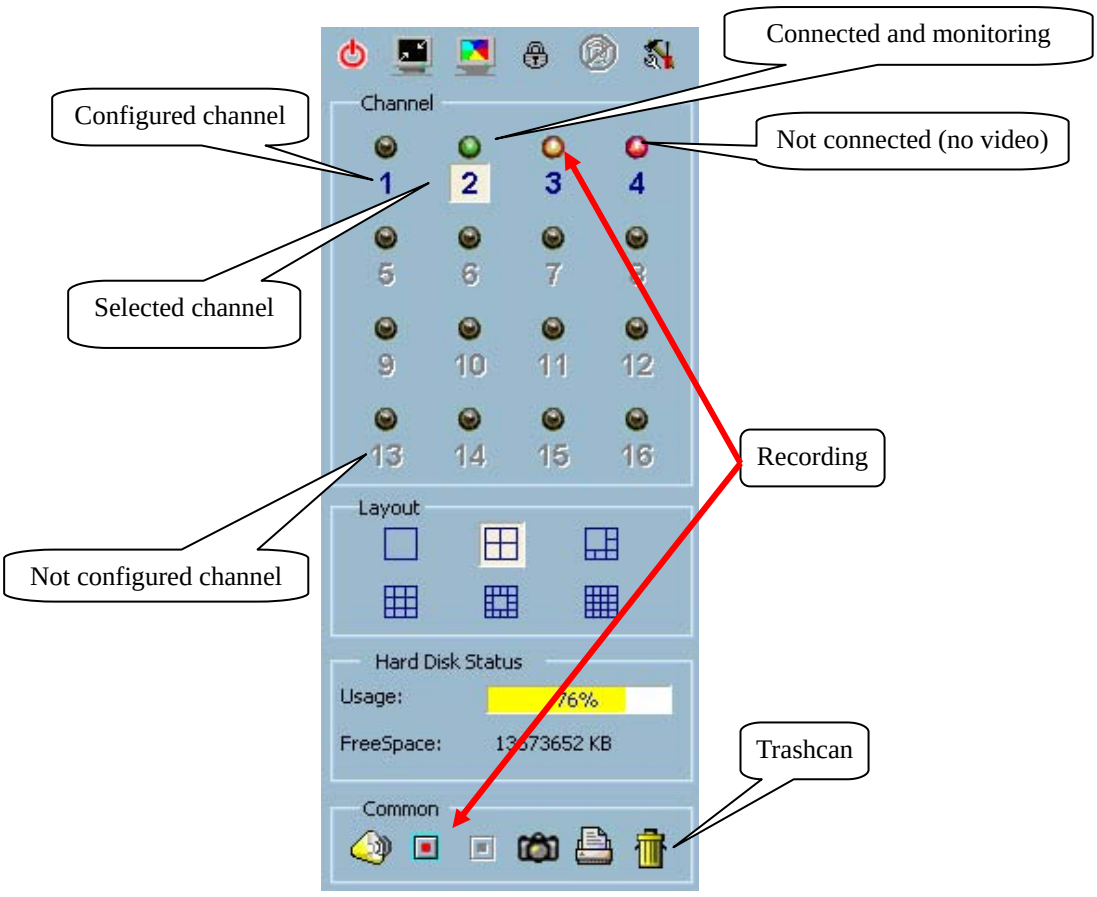

Figure 3-18 Channel Area

There is a unique light signal associated with each channel number. It indicates the status of the dedicated channel, as listed below.

✓ Off (Black)
The channel is not connected with any remote Video Server / Network Camera series product.

✓ Green
The green light means the Video Server / Network Camera series product associated with this channel number is connected, and the video is being monitored in the video area.

✓ Orange
The orange light indicates the video from this channel is recording into the media database. In this mode, you do not need to click, drag, and drop the channel to the video area. This means the application software supports real-time recording with and without real-time monitoring for the dedicated channel.

✓ Red
The red light indicates the connection to server has been unexpectedly disconnected and Monitor is trying to reconnect to the server. There are several cases that will cause server is disconnected:
Authentication Fail–
Suppose user changes server from model A to model B by himself without using Camera Configuration tool which described in section 3.4. If the login passwords are different between those two models, the hint of “Authentication Fail” will be popped up as shown in Figure 3-19:

Figure 3-19 The Hhint of Authentication Fail

As shown in Figure 3-20, within such case, user can invoke authentication window by clicking corresponding channel number and re-input correct password to reconnect to server. Figure 3-21 shows the authentication window.

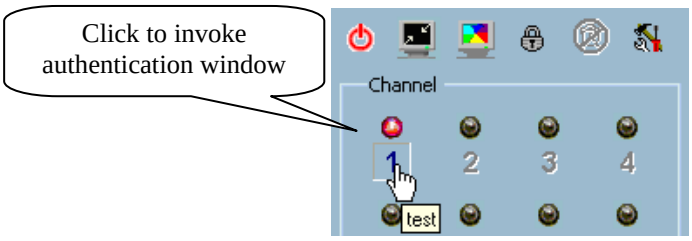

Figure 3-20 Invoke Authentication Window

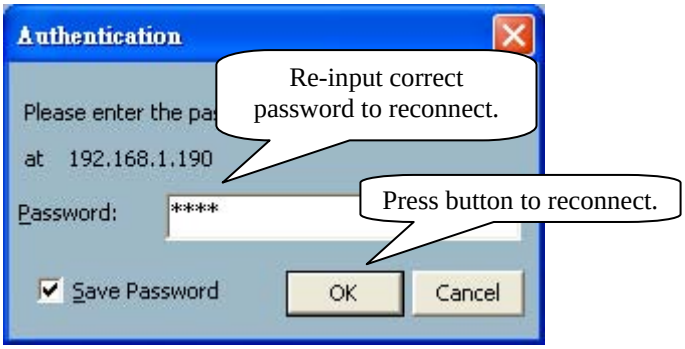

Figure 3-21 Authentication Window

NOTE: The hint will also be popped up when user changes login password in IE.

Incorrect Settings–

If the option of “Apply to new device” doesn’t be enabled, the hint of “Incorrect Settings” will be popped up when the settings (model A) that were configured in Camera Configuration window (section 3.4) are different with the connecting server (model B). The following Figure 3-22 shows the hint of “Incorrect Settings”:

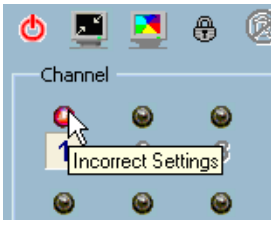

Figure 3-22 The Hint of Incorrect Settings

In this case, user can enable the option of “Apply to new device” and the application will reconnect to server automatically.

Unknown Type–

If the connecting device is not supported Video Server / Network Camera series product (such as PC or another network device), the hint of “Unknown Type” will be popped up. Please check what device is assigned the specified IP address and change to supported Video Server / Network Camera series product. The hint is shown in Figure 3-23.

Figure 3-23 The Hint of Unknown Type

ATTENTION: The above three cases will occur if those two models A and B are set as the same IP address. Otherwise, the hint of “Disconnect” will be displayed.

✓ Blink

If the motion detection mechanism is set in the remote Video Server / Network Camera series product, the light corresponding to the channel will blink if a motion event is detected.

If you do not want to monitor one video, you can click, drag, and drop the video (in the video area) to the trashcan in the common control area of the Monitor tool. The following shows the step-by-step procedure of “drag and drop”.

3.7.1.1 Show the video of the specific channel

This section depicts the method of showing the video of a specific channel in the dedicated displaying frame in the video area.

Step 1: Move the mouse cursor to the channel number, as shown in Figure 3-24.

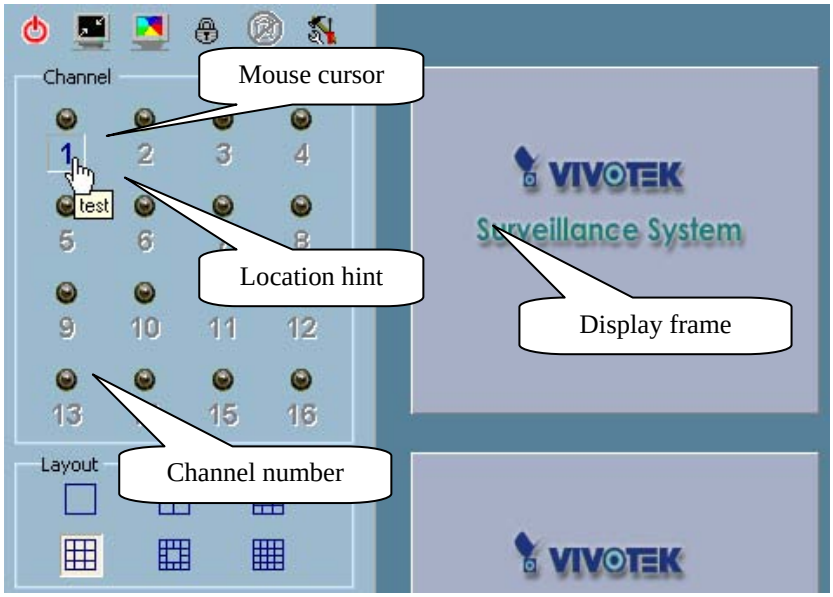

Figure 3-24 Mouse Cursor on the Channel Number

Step 2: Press and hold down the left mouse button and drag the mouse cursor to the displaying frame in the video area, as shown in Figure 3-25. Note that the cursor will be changed according to the area indicating whether the selection can be dropped there.

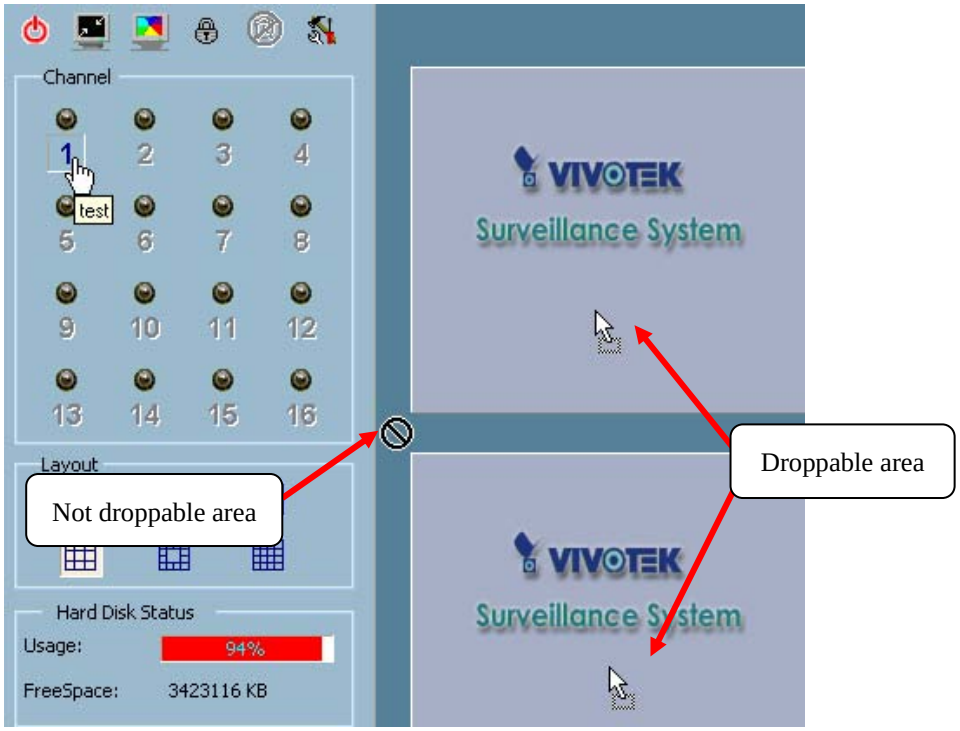

Figure 3-25 Drag the Channel to the Displaying Frame

Step 3: Move the mouse cursor to the area in which the selection can be dropped (in

this case, it should be the video area), and then release the mouse button. In each layout, each channel is corresponding to one and only one displaying frame in the video area, as shown in Figure 3-26. Therefore, the drag and drop from the channel number to the displaying frame can be treated as “exchange of channels in the displaying frames”. That means whatever video is on the newly selected channel will replace the one on the current display frame. You can apply this criterion to exchange the channels in different displaying frames. Let us assume the video of Channel 1 is shown at display Frame X and the video of Channel 2 is shown at display Frame Y. The channels associated with the dedicated display frames will be switched when you drag and drop the video from display Frame X to display Frame Y and vice versa. Also, you can move the channel from its original display frame to a vacant display frame. All these functions can be performed by a single mouse operation “drag and drop”. This makes it very convenient to customize the video display layout for monitoring.

NOTE: Monitor will automatically associate newly added channel to empty frame of each layout. So you will find that the channel is automaticaly shown in layout after closing Camera Configuration dialog. But if you have manually changed the association in one layout, the automation for that layout would be disabled. There is no way to re-enable the automation.

Figure 3-26 Showing Video on the Displaying Frame

3.7.1.2 Close the channel in displaying frame

This section discusses how to close the video change in the display frame.

Step 1: Move the mouse cursor to the display frame associated with the channel you want to close.

Step 2: The cursor will turn into a hand-shaped icon when it is moved to the display frame. Press and hold with the left mouse button.

Step 3: Move the cursor and drag it to the trashcan in the common control panel of the Monitor tool.

Step 4: The cursor shape will change to an arrow-shape icon over the trashcan. Release the left mouse button. The video in the corresponding display frame will disappear. These operations are shown in Figure 3-27.

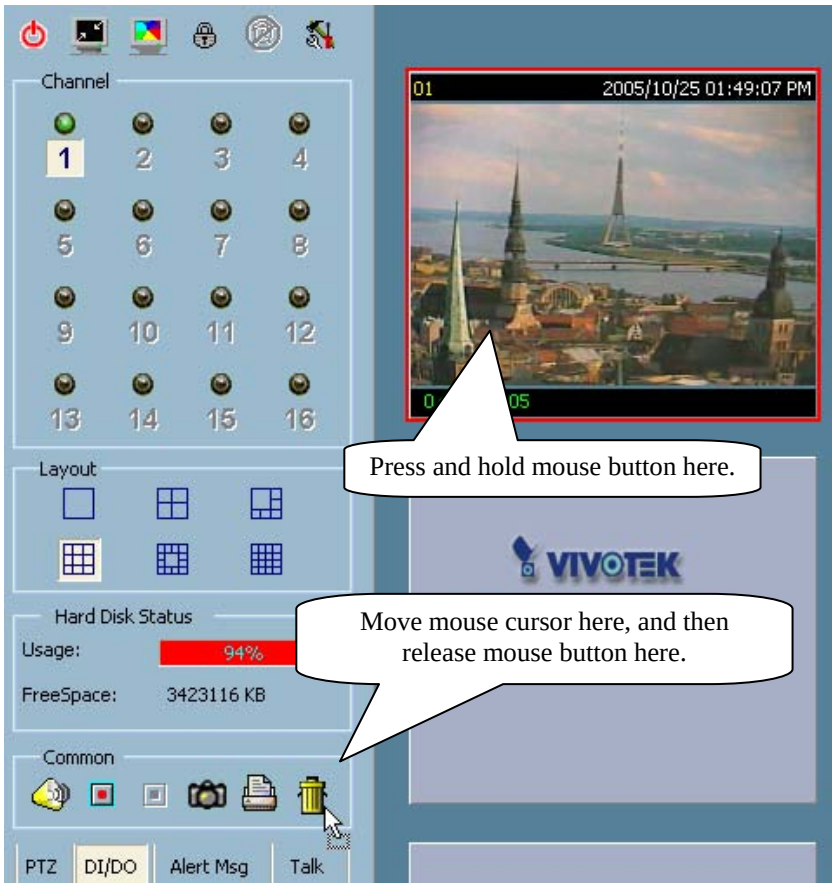

Figure 3-27 Close the Channel

NOTE: Even the channel is closed for current layout. The network connection is still connected. The reason to keep the connection is that if the connection is closed, it is not possible for Monitor to judge if any event is triggered.

3.7.2 The Layout

There are six kinds of layouts shown in Figure 3-28 for displaying frames in the Monitor tool. You can select one of them by clicking on the left mouse button over the layout icon you want. In each layout, you can select, drag, and drop the “channel number” to any display frame in the video area. The video from the remote site will be shown. Following the procedures described in Section 3.7.1.1, you can add the video of the channel to the display frame of the selected layout in the video area one by one. After that, you can also exchange video between different display frames by the same select, drag, and drop method.

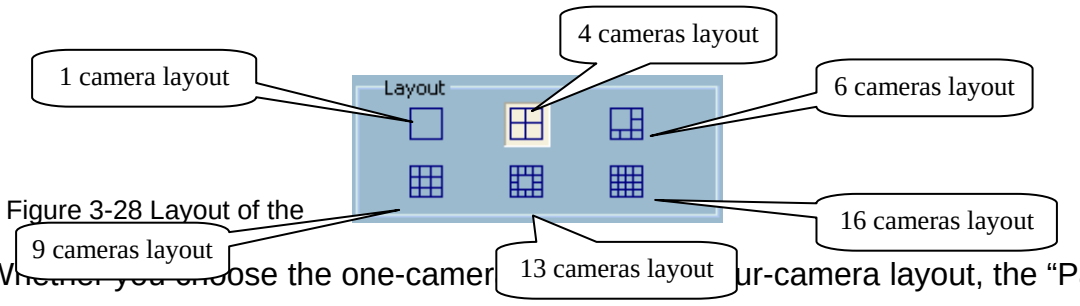

Figure 3-28 Layout of the

Whether you choose the one-camer ur-camera layout, the “Page up” and “Page down” buttons will be shown in the bottom-left corner of the video area. You can use these two buttons to switch the pages, as shown in Figure 3-29. Use the “Page Up” and “Page Down” key in keyboard could also swith the page. Page can be switched automatically if “Auto switch channel” is enabled. You can specify interval time and page will be swiched based upon the time.

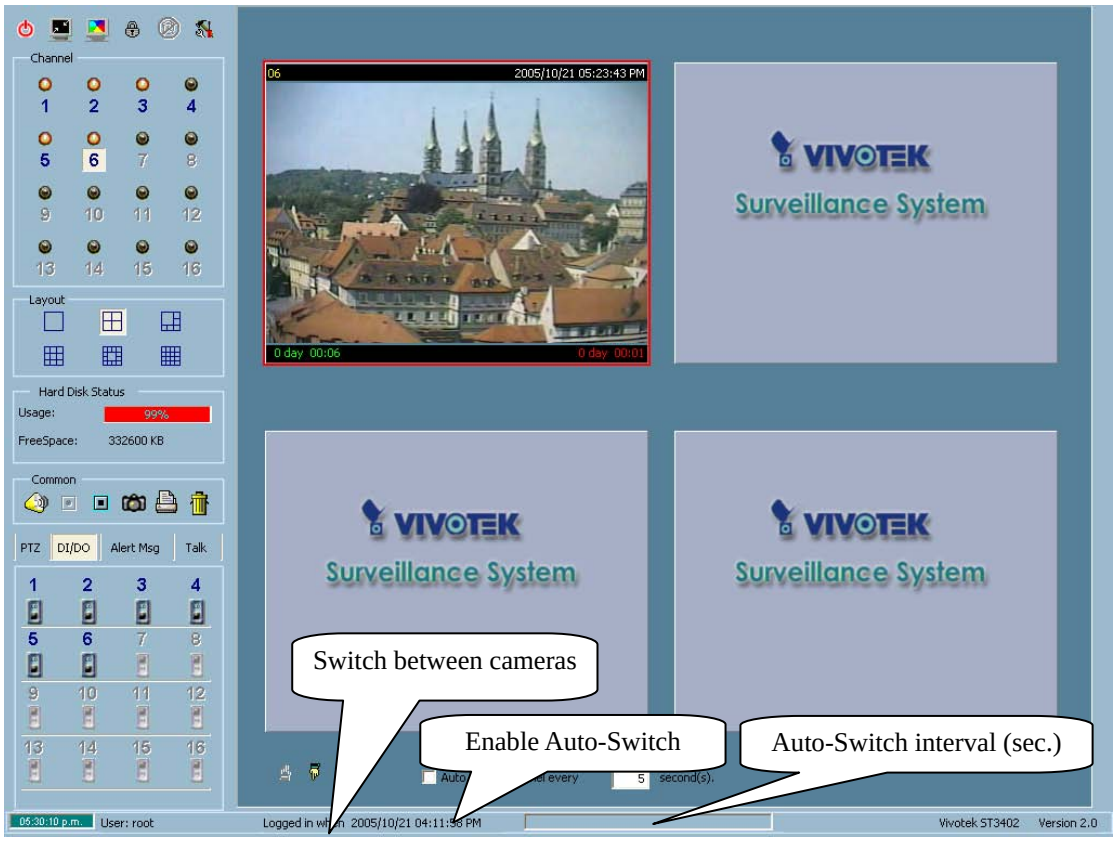

Figure 3-29 Four-camera Layout

NOTE: Auto-switch function will skip the page that doesn’t contain any channel.

When you want to view one individual camera from the multi-camera layout shown in

Figure 3-30, double-click on the display frame associated with the dedicated channel in the video area. You will see the size of the display frame is the same as the one-camera layout. As shown in Figure 3-31, clicking on the “Back” button in the upper-left corner of the video area will switch to the previous selected multi-camera layout.

The position for each channel in any layout will be kept for the next time when the layout is selected again for monitoring.

Figure 3-30 Double-clicking on the Displaying frame

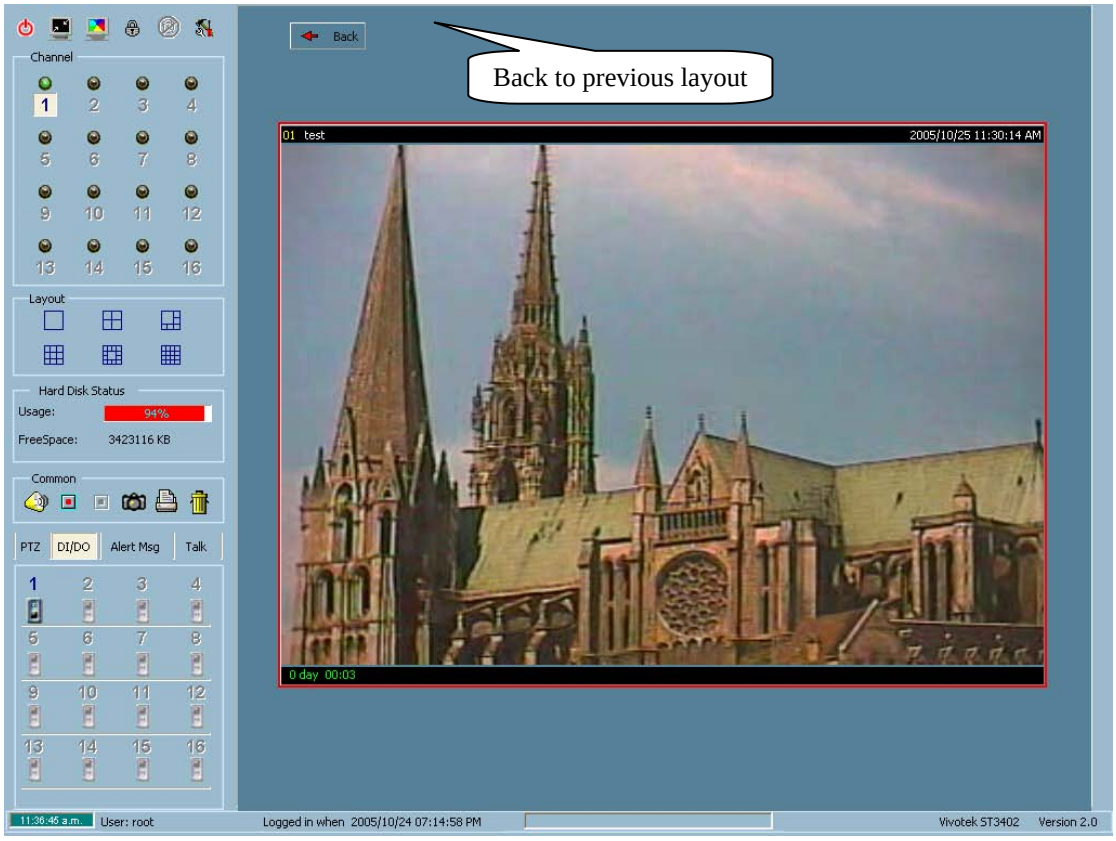

Figure 3-31 Single View Mode When in Multi-camera Layout

Input/Output Control Tools

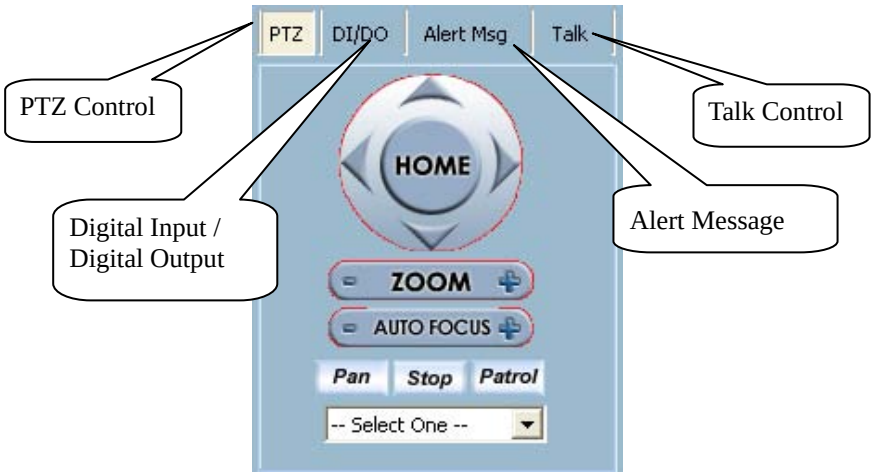

Figure 3-32 Input/Output Control Tool

This application software provides another three tools, shown in Figure 3-32, in the bottom-left corner, for controlling the remote Video Server / Network Camera series product of the associated channel. You can click on the dedicated buttons to switch to different control tools that include PTZ (Pan/Tilt/Zoom) control, DI/DO (Digital Input /

Digital Output) control, Alert Message receiver and Talk control.

3.7.2.1 PTZ Control

The PTZ (Pan / Tilt / Zoom) tool is shown in Figure 3-33. If the remote Video Server/ Network Camera series product associated with the selected channel is connected with a PTZ enabled camera, this PTZ control tool will be activated. You can do PTZ operations, as well as going to the preset location set by the previously user-defined position. Auto-pan and auto-patrol are enabled when the selected channel is associated with PT Network Camera series product. You can also apply PTZ control to several cameras simultaneously. See Section 3.7.7.

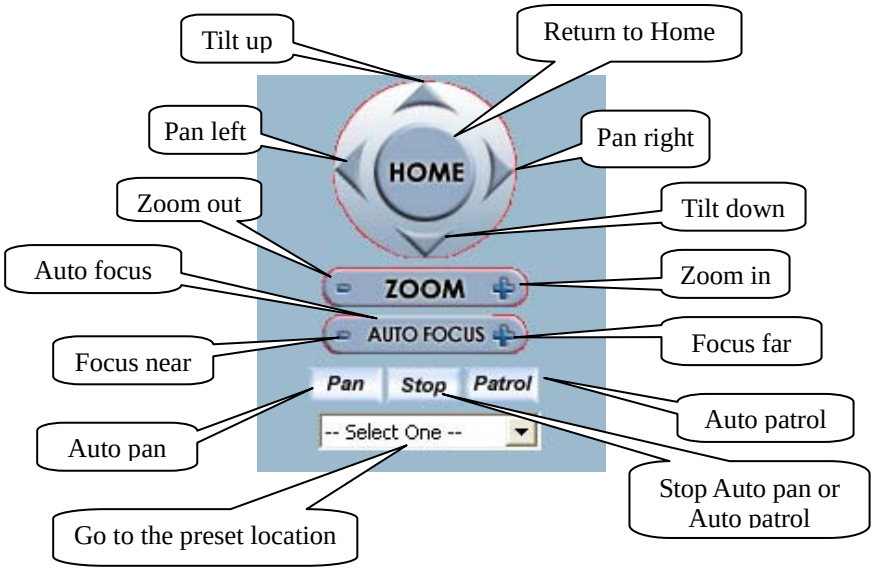

Figure 3-33 PTZ Control

3.7.2.2 DI/DO Control

After clicking on the “DI/DO” button, shown in Figure 3-34, the control page will be switched to the DI/DO control tool. Only users of root group and power user group can access the DI/DO control of the remote Video Server / Network Camera series product. In this application software, the color of the channel number indicates the status of the DI (Digital Input) of the channel. You can click on the “Switch button” to change the HI/LOW state of the DO (Digital Output). These features allow you to monitor the remote sensor input from DI and also trigger the remote by the DO switch.

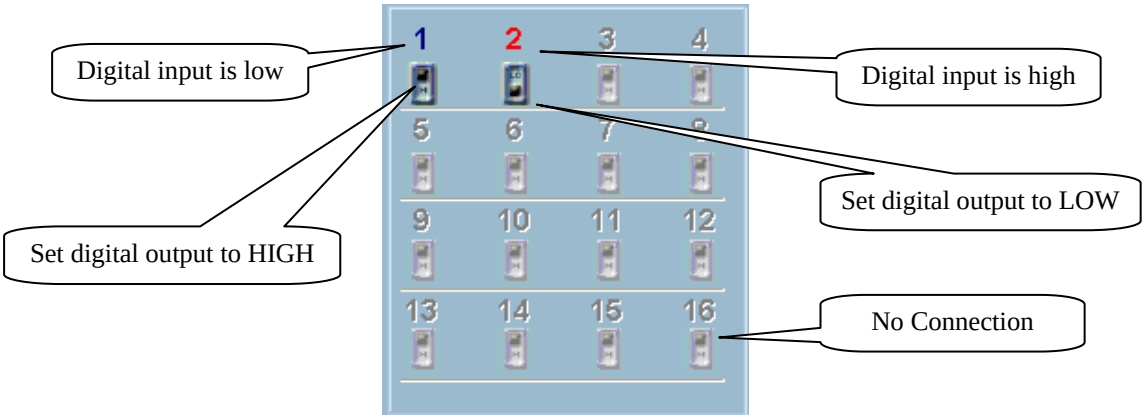

Figure 3-34 DI/DO Control

The color of the DI status is depicted as follows:

✓ OFF

When the color of the channel number is gray, that means this channel is not connected to any remote Video Server / Network Camera series product.

✓ Red

The channel number turns red indicating the DI of the remote Video Server / Network Camera series product associated with the selected channel is in high level.

✓ Blue

The channel number turns blue if the DI of the remote Video Server / Network Camera series product associated with the selected channel is in low level.

3.7.2.3 Alert Message

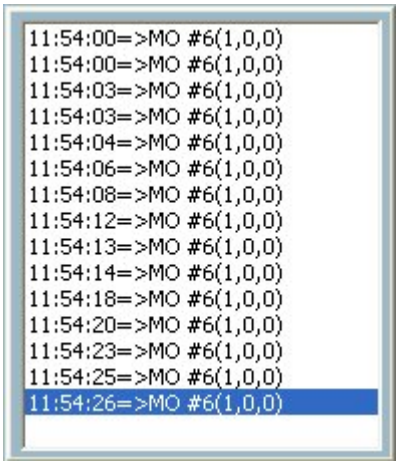

Figure 3-35 Alert Message

If you select the check box for “Enable Motion Detect”, “Enable Digital Input” or “Enable Video loss” in the path “Configuration Menu \ Camera Configurations \ Alert Settings”, the alert message will show in the window as shown in; refer to “Alert Settings” in Section 3.4.3. An alert message appears in this window when an alert is triggered by user defined motion detection or a digital input level change. You can also use the scroll bar of this box to check on the alert event’s history.

The message format is described as follows:
“time”=>”alert type” #”channel number”(“win1”,”win2”,”win3”)

The message “02:41:00=>MO #1(0,1,1)” means that this was a motion detection alert occurred at 02:41:00 AM in Motion Window 2 and Motion Window 3.
The message “14:41:56=>DI #1” means there was an alert triggered by the first DI at 02:41:56 PM.

The message format of video loss is as follows:
“time”=>video loss”#”channel number

For example, “07:20:03=>Video Loss#5” means that a video loss alert occurred at 07:20:03 AM in channel 5.

3.7.2.4 Talk Control

Talk Control is shown as follows:

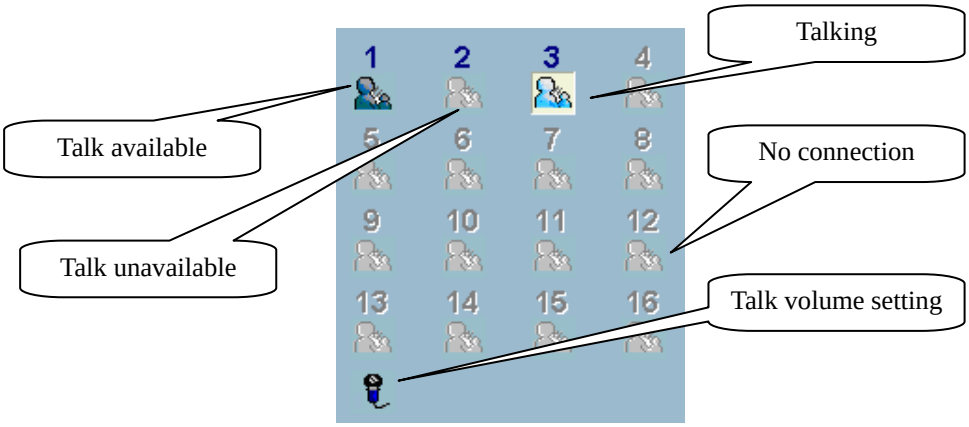

Figure 3-36 Talk Control

✓ Talk Available

When the connected Video Server / Network Camera series product supports the feature of 2-way audio, talk with remote side is available. User can click the button to establish talk channel. When the channel is established, the state will enter to talking and user can talk with remote side by microphone.

✓ Talk Unavailable

Talk may be unavailable if the connected Video Server / Network Camera series product doesn't support 2-way audio feature.

✓ Talking

The state means that the channel is talking with remote side now. You can adjust volume by using Volume Setting tool or stop talk by click the button.

✓ Talk Volume Setting

User can adjust the volume of talk by using this tool. Click the button and the Volume window will be invoked.

NOTE: Remote alert will also occupy talk channel. Only one talk channel can be established at the same time for a server. You can establish maximum 16 talk channels with different servers simultaneously. If the talk channel has benn established with specified server, a warning message will be pop up and the talk channel can't be established success.

3.7.3 Backup

Figure 3-37 the Process of Backup Operation

"Backup" allow you to copy the recorded media data to another media according to the location and the size you have selected. You can refer to Section 3.5 "Configuration Menu \ Global Settings \ Backup Settings" for more details on backup settings. From the backed up media data in the media, you can duplicate the backup-data to any removable device, such as CD-ROM, ZIP disk, DVD-RAM, or tape, manually.

After backup settings have been configured, you can activate the backup operation by clicking on "Configuration Menu \ Backup", as shown in Figure 3-37. Once the backup process is started, and, while in progress, you are prohibited to configure the remote Visual Server / Network Camera series product, or change any local settings. You can cancel the backup process by simply clicking on the "Configuration Menu \ Cancel Backup" option and choose the status of the progress. A message box pops up to indicate backup is complete.

3.7.4 About

Clicking on the menu "Configuration Menu \ About…" as shown in Figure 3-38, pops up a dialog box with information including product name, version, user information and serial number.

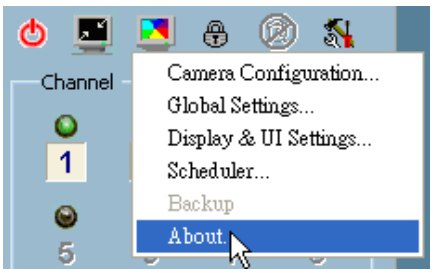

Figure 3-38 About

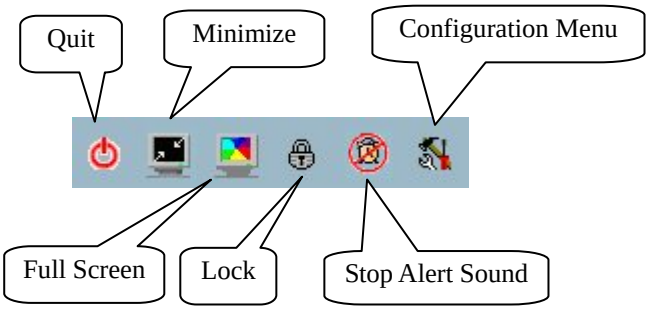

Figure 3-39 Miscellaneous functions

3.7.5 Miscellaneous Functions

This section describes other miscellaneous functions represented by small icons in this application software, as shown in Figure 3-39. These functions can be applied regardless of which is the currently focused channel. These functions are each described below.

Quit

Clicking on this button closes this application software with the latest saved settings.

Minimization

Clicking on this button minimizes the Monitor application.

Full Screen

Clicking on this button enlarges the selected channel to a full-screen display. To switch back to the original layout, press on the “ESC” key at the top-left corner of the keyboard, or double click on the mouse cursor on screen.

Lock

Click on this button to lock this program. When in lock mode, the main window will be hidden and the lock dialog will appear. To return to the main window, you need to re-enter the root’s password or the password of the user who locked application.

Stop Alert Sound

Whenever an alert is triggered, an alarm will sound if it was set up. You can click this button to stop the alarm. It will also switch the I/O Control Tool to the Alert Message Tool, as depicted in Section 3.7.2.3, and automatically shows the alert messages.

Configuration Menu

This menu includes Camera Configuration, Global Settings, Scheduler, Backup, and About options.

3.7.6 Common Control Functions

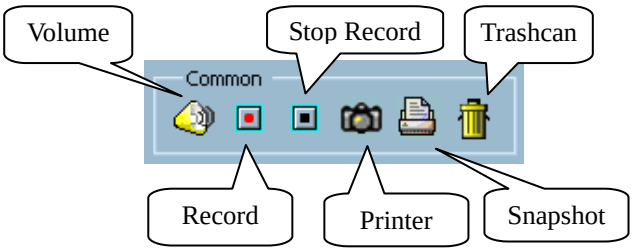

Figure 3-40 Common Control Functions

This section describes other Common control functions, respresented by small icons, as shown in Figure 3-40. These functions can only be applied to the focused channels. These functions are each described below.

Volume

Clicking on this button to adjust the audio volume when monitoring provided the camera supports audio.

Record

By clicking on this button, you can manually activate video recording on the selected channel.

Stop record

This allows you to manually stop the video recording on the selected channel; whether the recording was event-driven or by scheduled triggering, or manually activated.

Printer

You can print all views currently shown in the view window.

Snapshot

This function is to take a snapshot of the selected channels in the current layout, and save the pictures as bitmap files to the hard disk. You can pre-set the directory in which these bitmap files are stored in “Configuration menu \ Global Settings”. Please

refer to Section 3.5 for details.

Trashcan

You can drap and drop the channel to the Trashcan. This does not close the video connection with the remote Video Server / Network Camera series product. But the display for the channel in current layout will be removed.

You can apply Volume, Record, Stop record, Printer, and Snapshot to several cameras simultaneously. See Section 3.7.7.

3.7.7 Multiple Focus

Some functions can be applied to more than one camera simultaneously. These functions include PTZ controls, Volume control, Record, Stop Record, Printer, and Snapshot. First, set multiple focuses to the cameras you want to control, and then do operations such as PTZ controls, Record, etc. The way to focus more than one camera at a time is to press CTRL and click on display frames in the view window. You can only set multiple focuses to the cameras on the same layout page, and only select them from the view window, *not* from the channel panel.

3.7.8 Status Bar

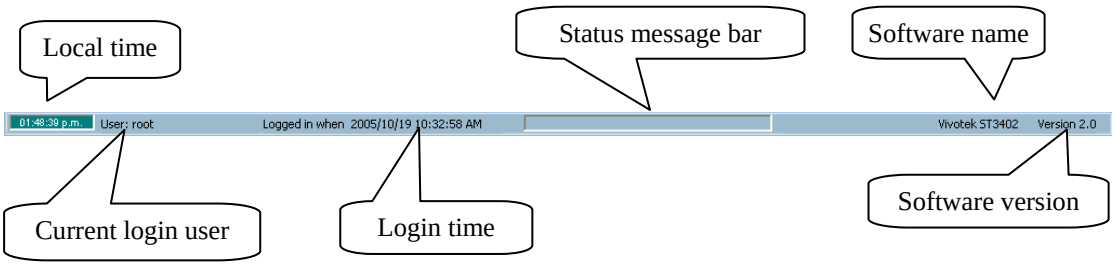

Figure 3-41 Status Bar

- ✓ Local time —shows the current time of the local site.
- ✓ Current login user — shows the current login user's name.
- ✓ Login time — shows the time when user logged in.
- ✓ Status message bar — shows messages on some background operations, such as repairing database or locations.
- ✓ Software name — shows the software name of this application.
- ✓ Software version — shows the software version of this application.

Chapter 4 Scheduling

The Scheduling tool helps the user to schedule the time to record the media stream of the selected channels from the remote Video Server / Network Camera series product. With both the graphic user interface and time period selection options, you can easily schedule each channel.

The main features of the Scheduling tool are depicted as follows:
User-friendly graphic interface for schedule editing
Flexible schedule scheme suitable for most applications need
Individual schedule for each channel
Automatic period recording

4.1 Invoke Scheduling Tool

This section describes how to invoke the Scheduling tool.

4.1.1 Starting the Scheduling tool

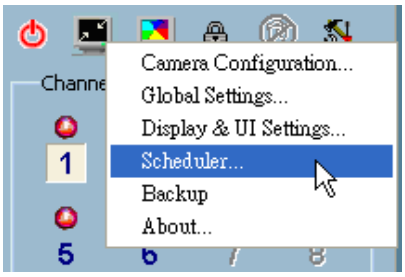

Figure 4-1 Open Scheduler Tool

Before starting the Scheduling tool, click on the “Configuration Menu \ Scheduler…” as shown in Figure 4-1, there must be at least one camera on the camera list. Otherwise, the Scheduling tool cannot be invoked. You will need to specify the database directory of the schedule schemes and the video stream in the path “Configuration Menu \ Global Settings \ Directory Settings”. Refer to Section 3.5 for more detailed information. After all of the above are set, you can click on “Configuration Menu \ Scheduler…” to invoke the Scheduling tool.

4.2 The Layout and Functionalities

In this section, the layout and the functionalities of the Scheduling tool are depicted in detail.

4.2.1 Introduction

Figure 4-2 shows the layout of the Scheduling tool's components.

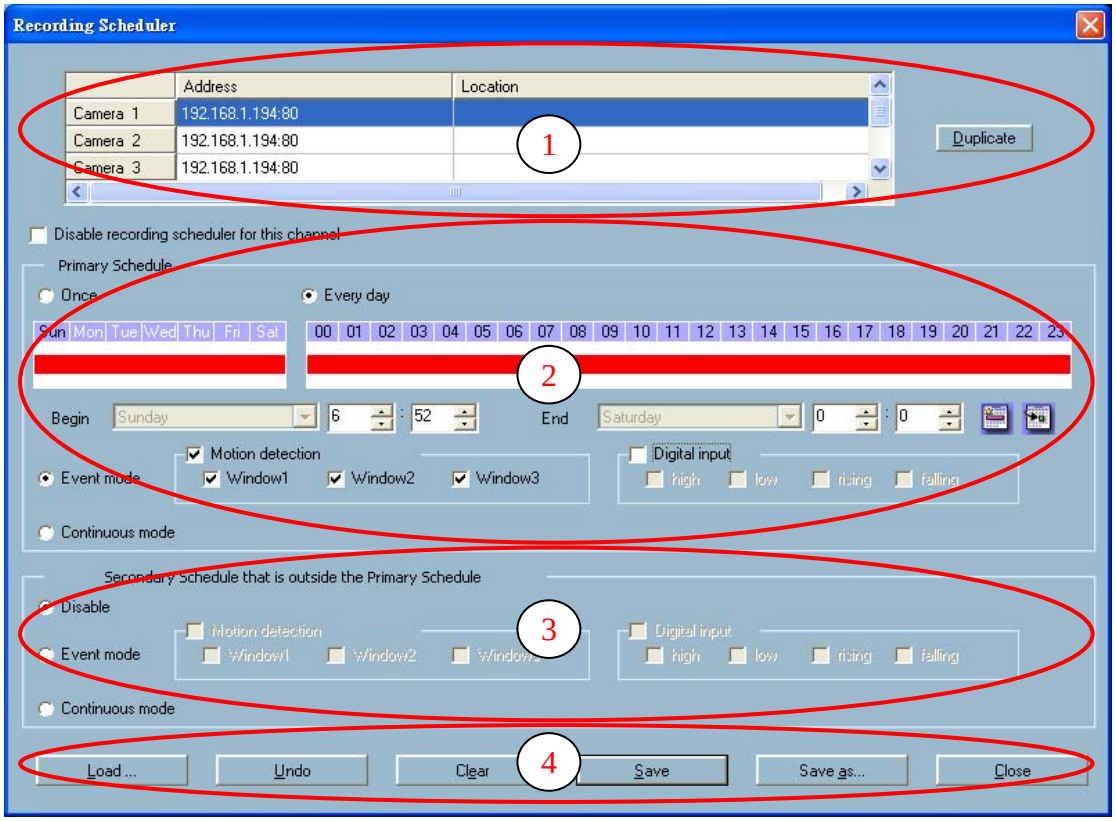

Figure 4-2 Overview of the Scheduling Tool

The layout is roughly divided into 4 parts:

Channel Selection Area:
It provides the IP addresses and location information of the connected channel. You can select one channel in this area and start to edit a dedicated schedule scheme for it.

Primary Sschedule:

It consists of day time-line, week time-line, begin time selector, end time selector, and event mode settings.

Secondary Schedule:
It consists of event mode settings.

Operation Buttons:
It contains operation buttons for the user to fine tune the edited schedule-scheme of the selected channel, and close the Scheduling tool window.

These four parts will later be described in detail.

4.2.2 The Functionalities of Configuration Components

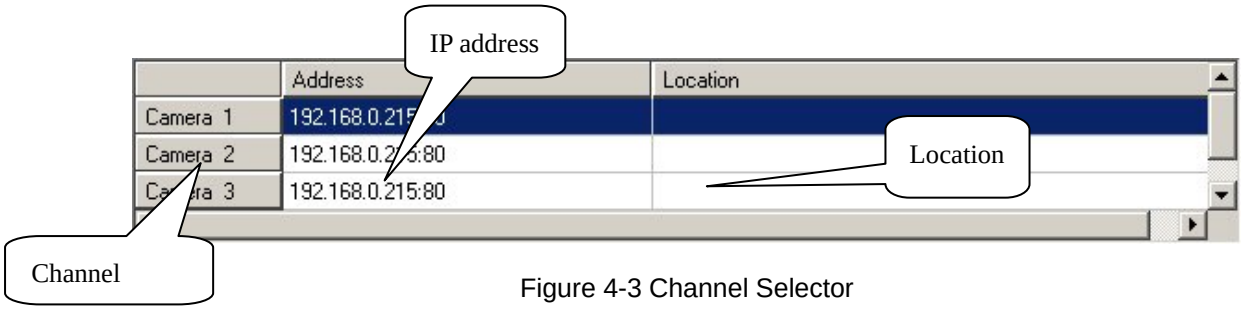

Figure 4-3 Channel Selector

The channel selector shown in Figure 4-3 is typical for a dedicated channel. When you click on the row to select the channel, the scheduling tool will load the dedicated schedule scheme associated with the selected channel automatically. If the remote Video Server / Network Camera series product has been properly configured, the IP address and location of the selected channel will be shown. Please note that when you switch between channels in this selector, any editing and changes in the schedule scheme will be saved temporarily in system memory. To save the settings permanenty, please click on the “Save” button.

4.2.3 The Schedule Scheme operations

There are six related buttons, “Load…”, “Undo”, “Clear”, “Save”, “Save as…” and “Close” for handling the scheduling schemes. These are shown in Figure 4-4.

Figure 4-4 Operations for the Schedule Scheme Manipulation

Load…
This button is used for loading other pre-edited schedule schemes from the specified directory. Note that you will need to save the current-edited settings before applying this function. Otherwise, any editing changes will be lost.
Undo
This button is used for undoing all plotting markers for this schedule scheme from the last save.

Clear
This button is used for clearing all plotting markers in the current-editing schedule scheme of the selected channel.

Save
This button is used for saving the editing changes for the current schedule scheme.

Save as…
This button is used for saving the current-edited schedule scheme to another file name instead of the default name.

Close
This button is used for closing the scheduling. Any unsaved setting will be lost.

4.3 Primary Schedule

4.3.1 Schedule with Time Lines

There are two time-lines of different scales: *hour unit time-line* and *week unit time-line*.

You can make your own schedule scheme by plotting markers in all time-lines. These two time lines are associated with each other. That is, if you make changes in one time-line, the corresponding changes will be applied, in scale, to the other time-lines in the same schedule scheme.

4.3.1.1 Week Time-Line

Figure 4-5 shows the *Week time-line*. It includes the time-line, scheduling information, and the selected day of the week.

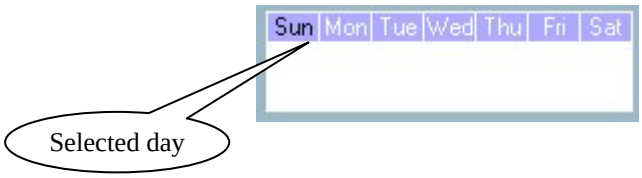

Figure 4-5 Week Time-line

4.3.1.2 Marking/Unmarking the Recoding Time

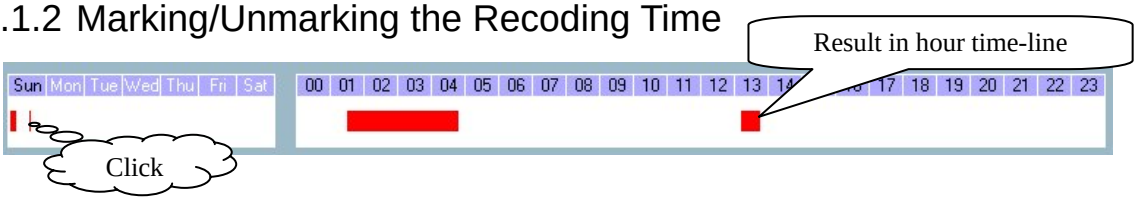

Figure 4-6 One-click on Week Time-line

The corresponding changes for the markers on the *week time-line* will be automatically added to the *hour time-line*, as shown in Figure 4-6. You can also mark and unmark the plotted bar by using the left and right mouse buttons.

NOTE: Time hint will be popped up when mouse cursor enters the *hour time-line*.

4.3.1.3 Hour Time-Line

Figure 4-7 shows *Hour time-line*. It includes the time-line, scheduling information.

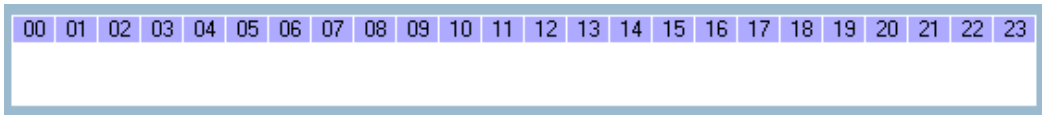

Figure 4-7 Hour time-line

NOTE: If you want to inquire about the scheduling information on Hour time-line, you can double-click the marked-rectangle. Start time and end time will be displayed on

the time picker that will be described in section 4.3.2 automatically.

4.3.1.4 Marking/Unmarking the Recording Time

You only need one click on the left mouse button to mark the time on this time-line. The operating method for the *hour time-line* is the same as that of the *week time-lines*. Please refer to Section 4.3.1.1 for details.

4.3.2 Schedule with Time Picker

4.3.2.1 Begin and End Time

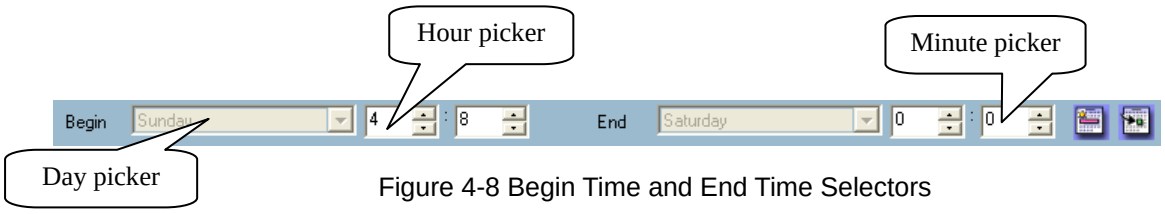

Figure 4-8 Begin Time and End Time Selectors

There are three controlling units in both “Begin Time” and “End Time” selectors, as shown in Figure 4-8. The first part of each of these two selectors is the Day Picker. You can select the day of the week with it and set the beginning time and the ending time for the recording interval.

The second and third units are the Hour Picker and the Minute Picker. You can change the hour and minute settings for the beginning and ending time with them.

NOTE: Normally, the time set in “Begin time” must be earlier than that in “End time”. But if this is not the case, it means the time is over two days.

4.3.2.2 Add and Erase Buttons

After you have selected the time period with the “Begin time” and “End time” pickers, you can apply the period picker, shown in Figure 4-9 and set the type of time interval that associates with the beginning and end time. After having the settings in “Begin Time”, “End Time” and “Period Picker” done, click on the “Apply” button to confirm the settings. Click on the “Erase” button to clear all scheduling information just entered. All newly entered scheduling time interval information will take effect only after the “Apply” button has been clicked.

Figure 4-9 Period Picker, Apply button and Erase button

4.3.3 Schedule in event mode

You can select to record in Event mode or Continuous mode by the Schedule mode selector as shown in Figure 4-10. There are two types of event recording, please refer to Section 4.3.3.1 and Section 4.3.3.2 for more information.

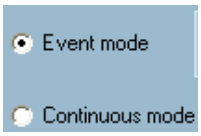

Figure 4-10 Schedule Mode Selector

4.3.3.1 Motion detection

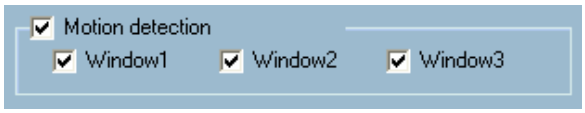

Figure 4-11 Motion Detection Selector

Figure 4-11 shows the window selection you want to record when motion detection is triggered.

4.3.3.2 Digital input

Figure 4-12 Digital Input Selector

Figure 4-12 shows the four digital input conditions. Select the triggering condition that you would like to start recording.

high : Event will be triggered when the digital input is high.
low : Event will be triggered when the digital input is low.
rising : Event will be triggered if the digital input changes from low to high.
falling : Event will be triggered if the digital input changes from high to low.

4.3.4 Schedule in Continuous mode

Figure 4-13 shows that if you have selected the Continuous mode then it will record

continuously according to the schedule set up by the user.

4.4 Secondary Schedule

Secondary schedule is the time that is outside the Primary schedule.

4.4.1 Schedule modes

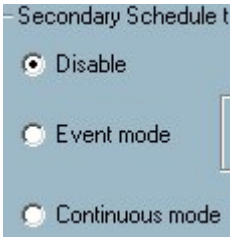

Figure 4-13 Secondary Schedule Mode Selector

As shown in Figure 4-13, there are three selections in the Secondary schedule mode selector: Disable, Event mode, and Continuous mode. You can disable the Secondary schedule, choose the Event mode or choose the Continuous mode. The two modes are the same as those in the Primary schedule. Please refer to Section 4.3.3 and Section 4.3.4.

Chapter 5 Playback

5.1 Features of Playback

The Playback program of this application software is a very powerful yet convenient and user-friendly tool the user can use in browsing the recorded media datamedia database. It has two display modes (normal display mode and event preview mode) and three playback methods (full range, time period, and events preview). There are several main tools consisting of special features in this Playback tool. These tools are depicted as follow.

Powerful play control tools:

- Play
- Stop
- Pause
- Step forward
- Fast play (from x1 to x16)
- Slow play (from /1 to /16)

Convenient display adjustment tools:

- Zoom in (from 1:1 to 2.25:1)
- Zoom out (from 1:1 to 1:2)
- Full screen

Flexible searching range adjustment tools:

- User input (from full range to 1 second)
- Zoom in (from full range to 10 seconds)
- Zoom out (up to full range)
- Page searching
- Full range

Various tools:

- AVI file transducer

BMP file snapshot
Output to printer directly
Volume control

System control tools:
Lock Program
System settings
Minimize

Miscellaneous tools:
Location selector
Alert window selector

5.2 Logging In

The authentication mechanism is implemented in Launcher. If the user has passed authentication in Launcher, Playback can be invoked without further authentication. Otherwise, Authentication diglog of Launcher will pop up and the user must pass authentication in order to use Playback.

NOTE: Playback can be invoked by user of root group or power user group. More detail about user's group, please refer to section 2.2.

5.3 Layout

Figure 5-1 Playback Main Window

Once you have successfully logged in to the Playback system, the main window appears at the top of the screen and the display resolution will be changed to 1024x768 automatically, if the current resolution is less. As shown in Figure 5-1, there are four main areas in this window: Display area, Histogram area, Control area, and Status area. There are also three visual indicators of the controls: Area Selection Indictor, Frame Selection Indictor, and Pull Bar. These features provide for powerful search for specific video recorded in the surveillance database.

5.3.1 Main Areas

5.3.1.1 Display Area

As shown in Figure 5-2, the Display Area can show the surveillance database of each camera in three ways: by events triggered, by alert, or by time. You can change video

size by using the Display Adjustment Tool and choose playback method by using the Play Control Tool.

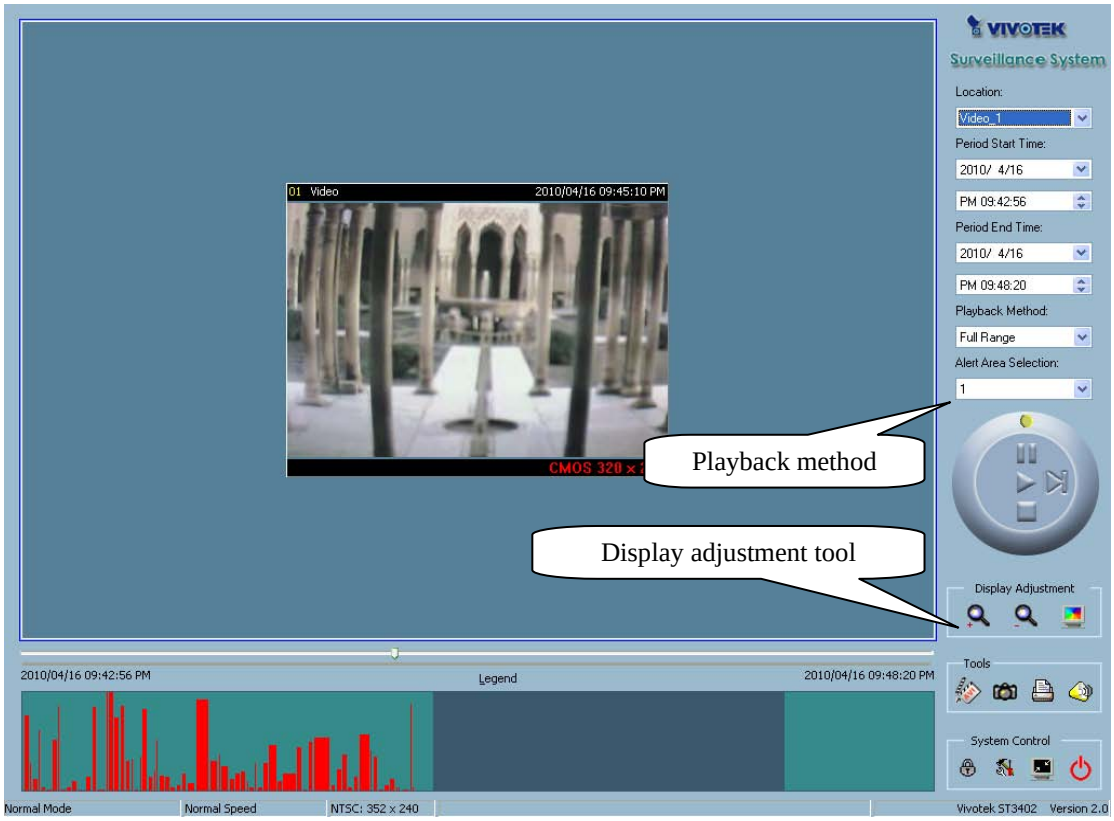

Figure 5-2 Display By Time (Normal Display Mode)

As shown in Figure 5-3, there are three kinds of information (loaction name, remote time and original recording size) that are displayed on the upper and lower bars respectively. When the display size is equal to the original recording size, the color of the original recording size will be changed to green, otherwise red. User can modify the display size in “Display Adjustment“(section 5.7.3) and “System Control” (section 5.4).

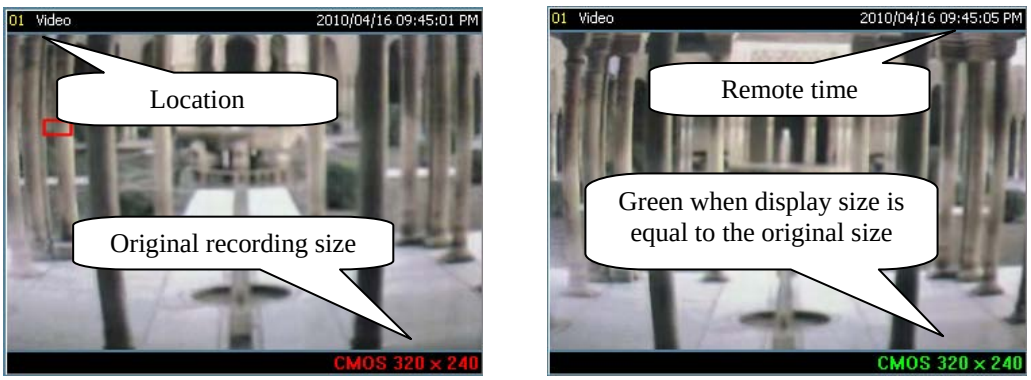

Figure 5-3 Video Information

5.3.1.2 Histogram Area

The Histogram is an interactive control. In the control, you can display events' time domain location and the percentage of motion. You can also select a group of events or a specific period, from the Histogram Area.

5.3.1.3 Control Area

The Control Area contains most of the control selections and toolboxes you need to browse the database, except Page Control. The Page Control Tool is located on the bottom-right corner of the Display Area when the program is operating in the event preview mode (as shown in Figure 5-4). The control tools include: Location Selector, Period Selector, Playback Method Selector, Jog Dial, Display adjustment, Searching Range Adjustment, Exporting, and System Control. Details are discussed in Section 5.7 "Using Tools".

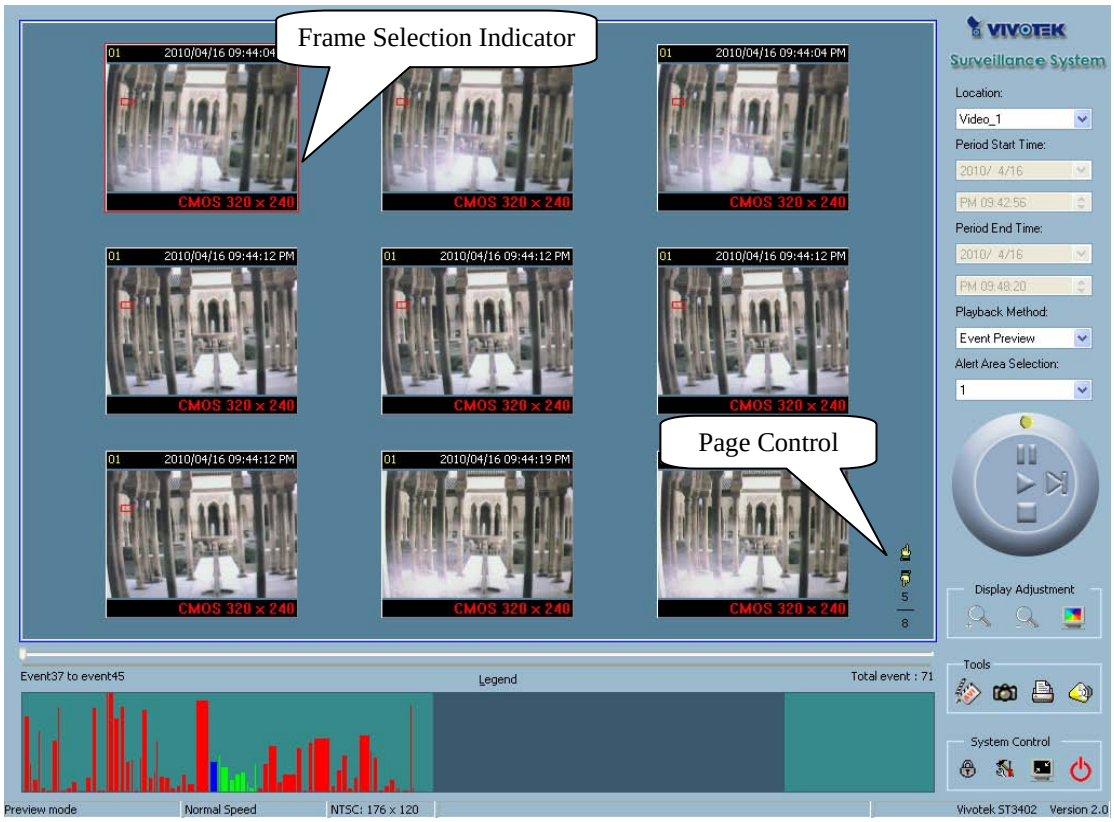

Figure 5-4 Display By Events (Event Display Mode)

5.3.1.4 Status Area

The Status Area is located at the bottom of the main window. It shows all program status information, including display mode, display size, display speed, exporting file

format, and exporting file name.

5.3.2 Indicators

5.3.2.1 Area Selection Indicator

As shown in Figure 5-1, the Display Area is surrounded by a blue rectangle. This is the Area Selection Indicator. This can be set to indicate either the Display Area or the Histogram Area. Move your mouse cursor to the area you want to select. When you have selected the Display Area, the Display Adjustment Tool will appear in the control area. If you have selected the Histogram Area, the Display Adjustment Tool will disappear and the Searching Range Adjustment Tool will be shown in the same place of the control area.

5.3.2.2 Frame Selection Indicator

The Frame Selection Indicator only appears when you change the display mode to event preview mode (as shown in Figure 5-4). It is a red rectangle surrounding to one of the nine event preview frames. Once a frame has been selected, you can control the playing status using the jog dial in the control area.

5.3.3 Pull Bar

The Pull Bar is a fast, flexible control for seeking specific data in the selected time period. In the total length of time in that period, you can click, or pull on the indicator on the Pull Bar to pin point a start time you wish to see. The video display will start playing the video sequence from that point on. If the replay is paused, the display area will show the point you have selected. Note that Pull Bar will only function under normal display mode.

5.4 Settings

Click on the “Settings” button shown in Figure 5-5 in the system control tool, and the setting dialog will appear on the screen as shown in Figure 5-6.

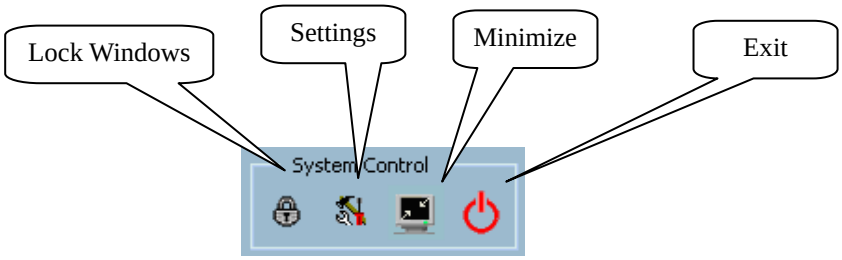

Figure 5-5 System Control Tool

Database location

The most important item in the settings dialog is the database path setting. You must set it to the directory that contains the surveillance database to make the program to work properly.

AVI files location

This sets the storing directory when you export AVI files. The exported AVI files will be stored in a sub-directory under the directory you have chosen here.

Snapshot files location

It sets the directory when you use the snapshot to export bitmap files. These exported bitmap files will be stored in a sub-directory under the directory you have chosen here.

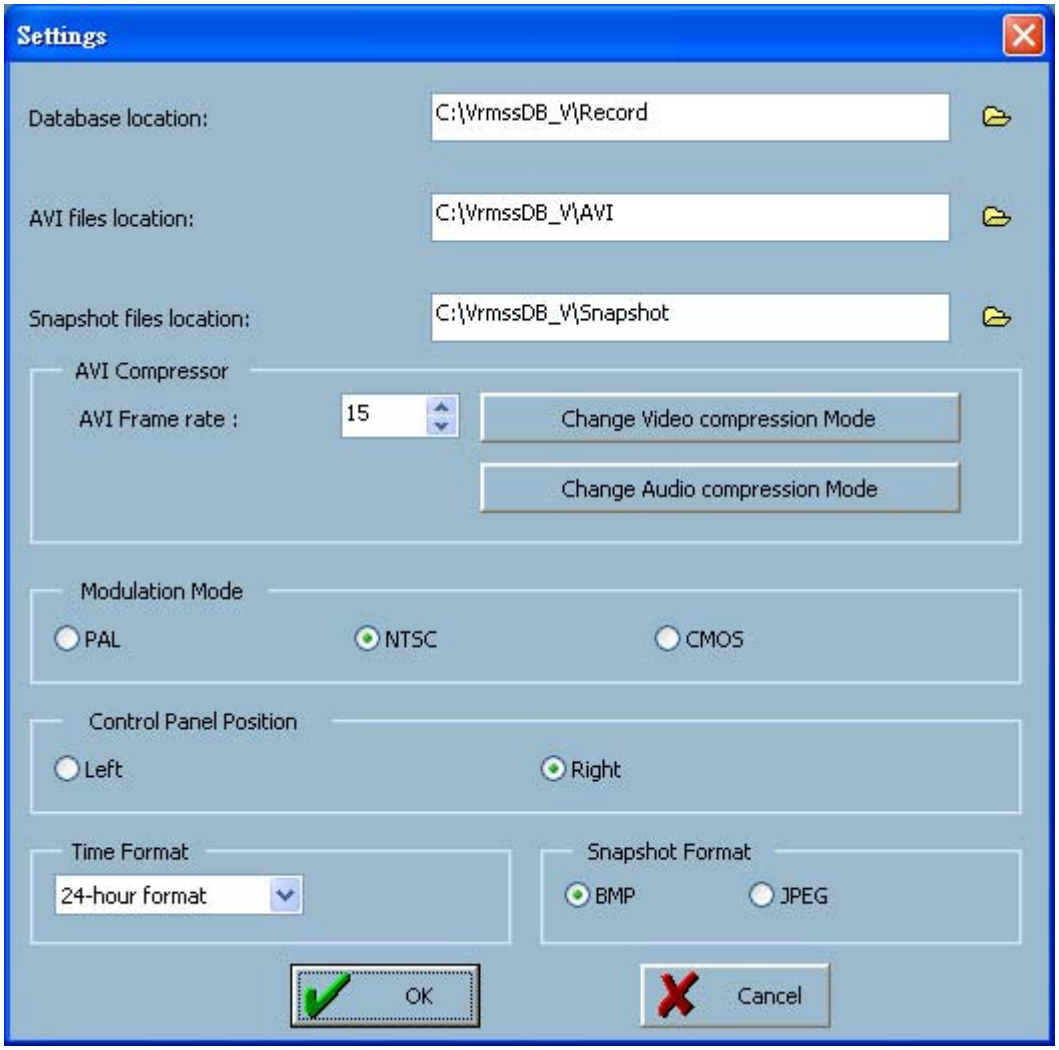

Figure 5-6 Settings Dialog

AVI Compression Mode

We use only 24 bits color depth to export the AVI file in this mode. In the AVI compression mode selection, you can select one of the compression methods (both video and audio) that your computer supports to export the AVI file. The compression methods may be different from computer to computer due to different compression methods in different computer installations.

Modulation Mode

The modulation mode decides the on-screen video size. It depends on how the video sequence was recorded in the monitor program. If you have selected the wrong modulation mode, the displayed video will be distorted. To correct this, open the Settings dialog and change into the correct mode.

Control Panel Position
This provides a convenient way to change the position of the control area, either to to the left or right side of the main window, according to your preference.

Time Format
There are two kinds of time format (12-hour / 24-hour) that can be selected by user to determine the time format in the upper status bar of display area.

Snapshot Format
Two formats (.jpg and .bmp) can be selected by user to determine the file format of snapshot.

5.5 Normal (Single Frame) Mode

There are several methods you can enter into the normal display mode with only one displaying frame:

(1) Change the database path from one to another in the settings dialog of “System Control” tool

(2) Change the location from one to another by using the selector location in the control area.

(3) Change the playback method selector to “Full Range”.

(4) Change the playback method selector to “Time Period”.

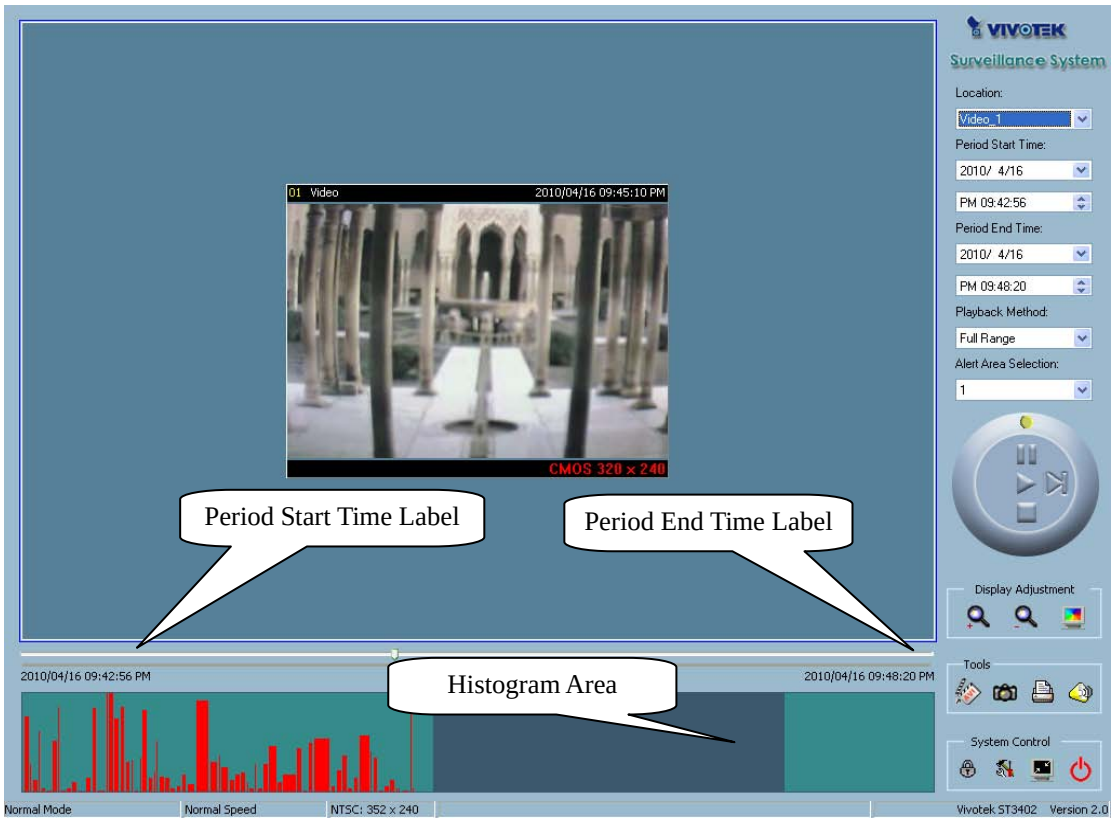

Figure 5-7 Normal Display Mode

Under the Normal display (single frame) mode, you can use all the tools the Playback program provides except the Page control. In this mode, the two labels under the Pull Bar show the individual starting and ending time of the interval (as shown in Figure 5-7).

5.5.1 Histogram Area

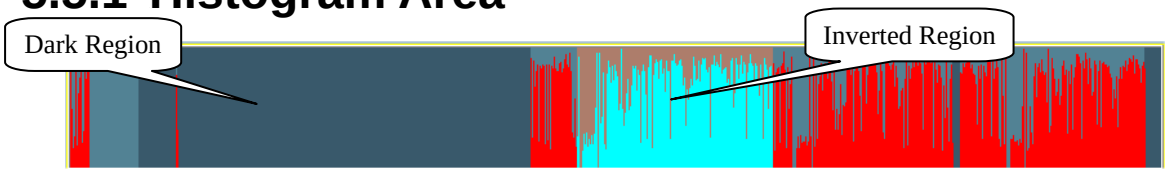

Figure 5-8 Histogram Area in Normal Display Mode

The Histogram Area in the Normal display (single frame) mode only indicates the events' occurred time and the percentage of motion detection as red bars. If you want to access the histogram area, you must change the Area Selection Indicator to the Histogram Area. You can mark one time interval you want to see with a color-inverted region by dragging your mouse cursor as you hold down the left mouse button (as shown in Figure 5-8). As you release the left button, the color-inverted region will replace the original time range as the new period the program displays. If you click on the left button without holding down and dragging it, the command will be the same as

clicking on the Pull Bar in the same x-axis position. That means the Playback system will be shifted to the appointed time and shows the video in the displaying frame. The dark regions in the histogram area means there is no media data existed in these intervals. If you click on these regions, a warning message will pop up.

5.6 Preview (Multiple Frame) Mode

You can enter the event Preview mode only if you have changed the playback method selector to “Events Preview”. This can help you to identify the objects that triggered the events, not only by the time information and the alert percentage in the histogram area but also by playing the real video preview. This allows you to easily distinguish between different alert situations. Under the Event Preview mode, the Pull Bar, “Transducer” button in the exporting toolbox, and the Display Adjustment Toolbox are disabled. The two labels under the Pull Bar show both the number of displayed events and the total event count. There are nine frames in the display area that we call one “page”. Each of the nine frames on each page displays a different video sequence event. Each event displayed will be of at least 10 seconds in length. You can use the “Page Up” and “Page Down” button in Page Control to browse the events in the selected period, up to nine events per page. There is also page status informing you the current page number and the total page count (as shown in Figure 5-9).

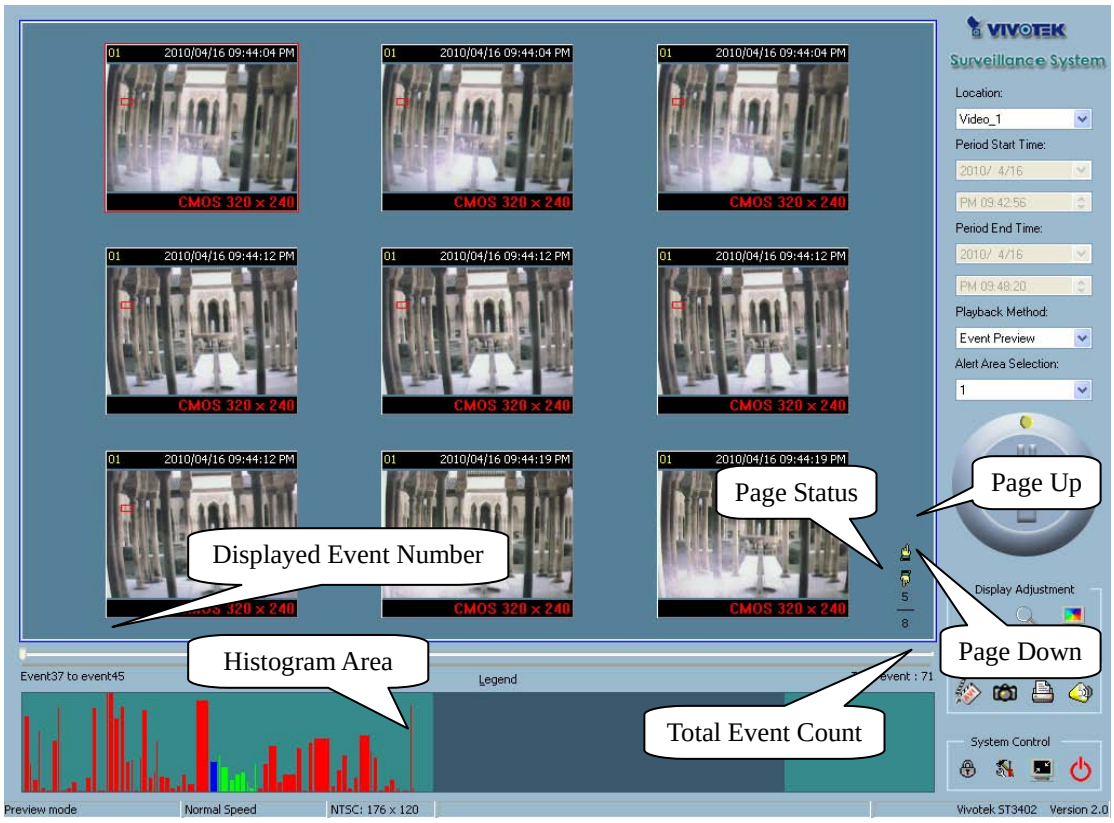

Figure 5-9 Preview Mode

5.6.1 Histogram Area

The Histogram Area in the event Preview mode shows the event occuring time and the percentage of the detected motion with red bars. It also indicates the current displayed events with green bars and the selected event with blue bars. If you want to access the Histogram Area, you must change the area selection indicator to the Histogram Area. You can then mark a color-inverted region over it by holding down the left mouse button and drag the cursor to the desired area (as shown in Figure 5-10).

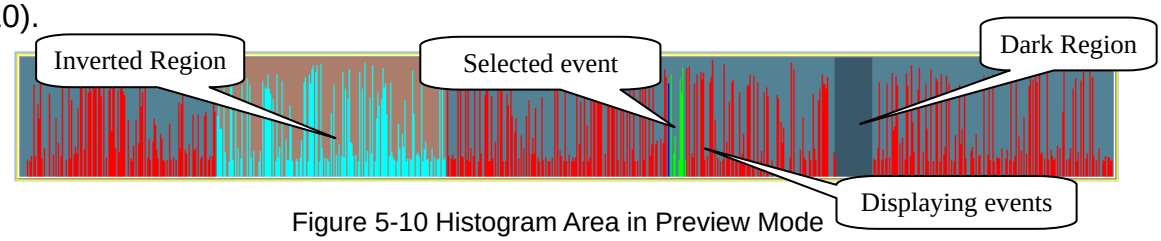

Figure 5-10 Histogram Area in Preview Mode

As you release the left mouse button, the color-inverted region will be enlarged to fill the entire histogram area. This color-inverted region will become the new period the program is going to display. If you click on the left mouse button without holding down and dragging it, the display area will show the event page closest to the point you

have selected. The dark regions means there is no video sequence existed in these intervals. If you click on these regions, a warning dialog will pop up.

5.6.2 Histogram Legend

Histogram Legend
- No data
- Interval with both audio and video
- Interval with video only
- Interval with audio only
- Events for motion detection
- Focused event
- Events in current page (Event Mode only)
- Events for digital input high
- Events for digital input low
Close

Figure 5-11 Legend of the Histogram

Figure 5-11 shows the legends corresponding to the colors represented in the histogram. You can call up this diagram by clicking on the Legend button.

5.7 Using Tools

This section discusses the method of how to use the tools in the control area, as shown in Figure 5-1.

5.7.1 Selector Tools

Figure 5-12 shows the Selector tools. These are: Location Selector, Period Start Time Selector for the selection of the beginning time, Period End Time Selector for the selection of the ending time, Playback Method Selector, and Alert Area Selector.

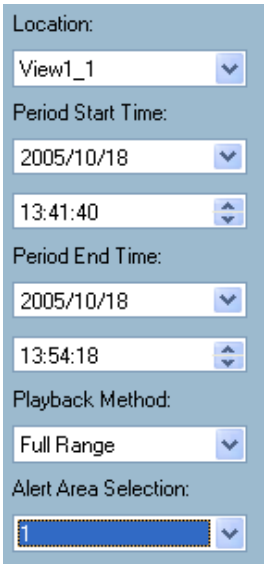

Figure 5-12 Selector Tools

5.7.1.1 Location Selector

The Location Selector lets you select the camera you want to view from (refer to Figure 5-12). The location information is the same as the location name associated with the dedicated channel in the Monitor program. If there are more than one time segments in the same location, another dialog will appear (as shown in Figure 5-13). You must select an interval in that dialog. If your selection is correct, the Playback program will automatically switch to that location and start to display.

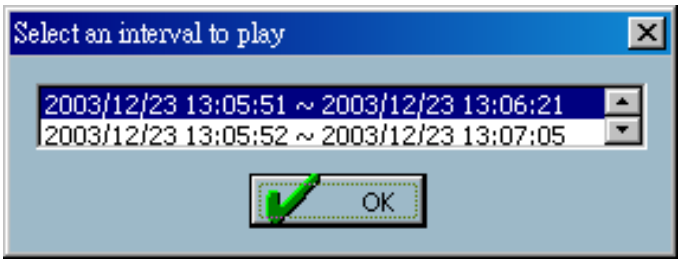

Figure 5-13 Time Interval Selection Dialog

5.7.1.2 Period Selector

Period Selector provides you a precise way to choose the start time and the end time of a new period. The end time should be larger than the start time. After you have given the correct start and end times, clicking on the “Play” button in the Jog Dial. The system will display the new period in the display area and change the period start and the end time labels. The Pull Bar and Histogram Area will be changed, too. If the selected period is not present in the database, the data in the period selector will be changed back to the previously correct start and end times and a warning message

will be shown.

5.7.1.3 Playback Method Selector

Full Range
If you select this method, the database will be displayed from the beginning to the end of this location. Any change in the period selector will have no effect unless you change this selector to “Time Period”.

Time Period
If you change the playback method to “Time Period”, you can modify the start and end times in the period selector. When you click on the “Play” button in the Jog Dial, the period you have selected will be displayed.

Events Preview
This method changes the display mode from the Normal display mode to the Event Preview mode or vice versa.

The program will save the previous start and end time settings in “Time Period” mode. Therefore, if you want to change the Period Selector to see in another period, you must first use the Playback Method Selector to change to the mode you want to use. Otherwise, the Period Selector will revert back to the previous period when you last changed the playback method.

5.7.1.4 Alert Area Selector

In the Preview mode, the Playback program only shows one type of the alert events each time. If you want to see the other type of events, you must use the Alert Area Selector to change to other event type. In the Normal display mode, the alert type that the Alert Area Selector indicates will be highlighted with a red rectangle. The Alert Area Selector will be changed to alert window 1 by default settings when you change the location selector.

5.7.2 Play Control

For Play Control, we used a jog dial, as shown in Figure 5-14, to make it easier to control video sequence display. Except for the “Play” button, all other buttons can control the displaying frame in the Normal display mode and the selected displaying frame in the event Preview mode.

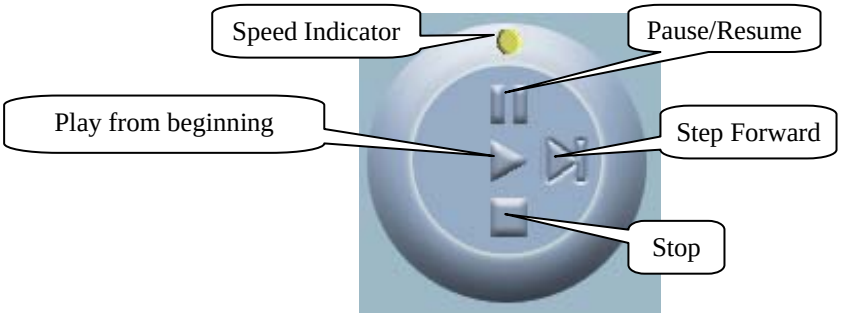

Figure 5-14 Jog Dial

Play from Beginning

The “Play” button we support here is an intelligent user-interface. The functionality of this button can vary to fit different circumstances. In the Normal display mode, click on the “Play” button restarts the displaying video sequence. In the Preview mode, if you do not change the data of the period selector, clicking on this button restarts the selected displaying frame. If the data of the period selector has been changed, clicking on the “Play” button restarts all frames to display the first nine events in the new period.

Stop

When you want to stop displaying the video sequence, you can click on the “Stop” button. Note that once you had pressed the “Stop” button, the start point will be reset to the beginning of the present period.

Pause/Resume

The “Pause” button provides you a way to pause video sequence display. When the displaying video is paused, clicking on the “Pause” button again will resume video display.

Step Forward

This button is valid only when the displaying video sequence is paused. Each time the “Step Forward” button is clicked, it will display the next frame in that period

Fast Play and Slow Play

We support up to a maximum of x16 fast forward play and a minimum of 1/16 slow forward play. This function provides you with more flexibility in browsing through the surveillance database. If you want to change the playing speed, you only need to move the speed indicator. To increase playing speed, move the indicator in the

clockwise direction. To decrease playing speed, move it in the counterclockwise direction. Current speed you are set at will be shown in the second column of the status area.

NOTE: You can press Ctrl key and the corresponding button introduced above simultaneously to stop/pause/resume/play all events in event preview mode.

5.7.3 Display Adjustment Toolbox

When you move the mouse cursor over to the displaying area, the display adjustment toolbox will appear. Using the display adjustment toolbox, you can change the displaying video sequence to the size you want to see in the Normal display mode. Move the area selection indicator to the display area. Figure 5-15 shows the display adjustment toolbox and its own three elements, i.e. “Zoom In”, “Zoom Out”, and “Full Screen”.

Figure 5-15 Display Adjustment Toolbox

5.7.3.1 Zoom In

Each time you click on the “Zoom In” button the image size in the display area will be magnified 12.5 percent of the original size. Due to the limitation of the display area size, the maximum zoom in size we support here is 792 x 540 for NTSC modulation mode, 660 x 540 for PAL modulation mode and 720 x 540 for CMOS modulation. If you want to see the image in more details, you can use the Full Screen function we support in the same toolbox.

5.7.3.2 Zoom Out

Each time you click on the “Zoom Out” button, the image size in the display area will be minified 12.5 percent to the original size. In order to completely show the location and time, the minimum zoom out ratio is limited to 0.5:1.

5.7.3.3 Full Screen

When you click on the “Full Screen” button, the video sequence will be enlarged to fill up the entire screen instantly. You can double-click on the mouse button in any area on the screen, or press the “ESC” key to return to the original state.

5.7.4 Searching Range Adjustment Toolbox

When you move the mouse cursor over to the Histogram Area, the Searching Range Adjustment Toolbox will appear in the same position as that of the Display Adjustment Toolbox. The Searching Range Adjustment Toolbox provides you a faster way to change the range of the displayed time period. By using this toolbox, you can browse the database of one location from any 10-second interval of the entire range. Figure 5-16 shows the searching range adjustment toolbox composed of its own three elements, i.e. “Zoom In”, “Zoom Out”, and “Full Range”.

Figure 5-16 Searching Range Adjustment Toolbox

5.7.4.1 Zoom In

Each time you click on the “Zoom In” button in the Searching Range Adjustment Toolbox, the displayed time period will be half of the original time period until the period is equal to 10 seconds, the minimum. You can see the new interval in more details. The scale of Pull Bar and Histogram Area will change, as well as that of the period start and end time. The Period Selector will show the new start and end time. The Display Area will restart to display the new period from the newly defined start time.

5.7.4.2 Zoom Out

Each time you click on the “Zoom Out” button in the Searching Range Adjustment Toolbox, the displayed time period will be doubled, unless the start time or end time exceeds the location time-boundary. The scale of the Pull Bars and Histogram Area will also be changed. The Period Selector will show the new start and end time. And the Display Area will restart to display the new period from the

newly defined start time.

5.7.4.3 Full Range

Clicking on the “Full Range” button would yield the same effect as you would in the Playback Method.

5.7.5 Toolbox

In our playback program, you can check the database and you can export the database to other media. Using the toolbox, you can export the database into other more portable formats, such as AVI file, bitmap file, or paper (hard-copy). You can also use Windows media player or other programs to browse the exporting data. Under Normal display mode, you can use all the exporting tools. Under Preview mode, only snapshot and print can be used. Figure 5-17 shows the elements of the toolbox.

Figure 5-17 Toolbox

5.7.5.1 Transducer

Using the Transducer tool, you can transpose the displaying video sequence to AVI file. Click on the “Transducer” button and the conversion procedure will start. The speed of exporting data depends on the speed of the computer’s processor. During any time of the exporting interval, you can click on the “Transducer” button again to stop the procedure in process. You will get an AVI file from the start time to the time you click on the “Transducer” button. The exported AVI filename will be generated automatically and listed in the fourth column of the status area. If you want to change the AVI file output directory, you can go to the Settings window as we have described in Section 5.4. To get a better quality of exporting AVI file, it is suggested to set the video format to normal size (please refer to Section 3.4 “Camera Configurations”).

5.7.5.2 Snapshot

Each time you click on the “Snapshot” button you can make the program export a bitmap file. In the Normal display mode, the exporting bitmap is the image shown in the display area. In the Preview mode, it is the image that you

selected through the frame selection indicator. The size of the bitmap will be the same as the source image you have selected. The exported bitmap filename will be generated automatically and be listed in the fourth column of the status area. If you want to change the bitmap file output directory, you can go to the Settings window as we have described in Section 5.4 under “Settings”.

5.7.5.3 Print

When you click on the “Print” button, a printing dialog will appear. After you have made your selection and send it to the printer, the images in the display area will be printed out. The printing functionality is designed based on the idea, “what you see is what you get”. Therefore, the output data will be the same as whatever you see in the display area.

5.7.5.4 Volume

When you click on the “Volume” button, a volume control dialog (Figure 5-18) will appear. After you have made your selection, it will change the volume to the value you have selected. You can also check the mute checkbox to silent the system.

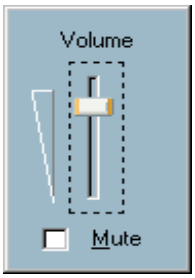

Figure 5-18 Volume Control Dialog

5.7.6 System Control Toolbox

The System Control Toolbox provides you some basic operations for the Playback program. Figure 5-19 shows the elements of the System Control Toolbox, i.e. “Lock Program”, “Settings”, “Minimize”, and “Exit”.

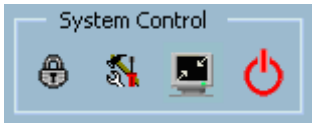

Figure 5-19 System Control Toolbox

5.7.6.1 Lock Program

If you are to be away from your computer, for security concerns, we suggest you lock the Playback program. You can simply click on the “Lock Window” button to lock the main window. Once this is invoked, the main window will be hidden and the login dialog will appear (as shown in Figure 2-2). To return to the main window, you need to re-enter the root’s password or the password of the user who locked the application.

5.7.6.2 Settings

The Settings dialog pops up when you click on the “Settings” button. For more information about setting this program, please refer to Section 5.4 “Settings”.

5.7.6.3 Minimize

The Playback program will be minimized as you click on the “Minimize” button. You can invoke Playback again by clicking on the playback window on the task bar or choose Playback from the Launcher.

5.7.6.4 Exit

The Playback program will close as you click on the “Exit” button. If the AVI exporting procedure is running, this procedure will be stopped first.